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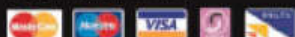
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# Missing the boat?

Or should that be pick-up? The commercial market hots up, leaving Land Rover behind

“Just because a vehicle is destined to be hard-working, there’s no need for the operator to suffer a noisy, bumpy, and uncomfortable daily drive”

**A**fter last month’s announcement of the heavily revised Mitsubishi L200 pick-up, this issue we bring you news of the new Nissan Navara. Add to that the forthcoming eighth generation Toyota Hilux, plus Isuzu’s impressive sales claims for the latest D-Max, all joining the excellent existing models from Ford and Volkswagen, and the global 4x4 commercial vehicle market is certainly an exciting place at the moment. We mentioned last week that Mitsubishi’s revisions are impressive, and while Nissan’s are perhaps a little less dramatic, it too will be a step up on the present version. All these manufacturers have cottoned on to the fact that just because a vehicle is destined to be a hard-working, tough, commercial machine, there’s no need to expect the operators to suffer an uncomfortable, drafty, noisy, bumpy, dated and agricultural drive. Speaking of the Defender, you have to wonder what is happening there. To paraphrase Mark Twain, it seems that rumours of the Defender’s demise have been greatly exaggerated. We understood production would cease before the end of this year, now it seems it’s early 2016. Rumours also persist of maybe kit versions being produced outside the UK, perhaps even fully built vehicles; thereby sidestepping the forthcoming European regulations that make continued UK production so difficult. For a company so impressive with its seemingly unstoppable new model launch programme, such dithering seems uncharacteristic. Dare we say it’s partly because a replacement for the Defender hasn’t actually been agreed yet? Everyone got very excited and agitated with the ‘concept’ DC100 model was unveiled some years ago. Funnily enough, I thought it looked excellent and a clever improvement on the existing version, keeping ‘the look’ but bringing everything up to date. It seems I was in a minority and that’s been ditched. You also wonder if it’s actually no longer about the design of a Defender replacement, and more whether there will ever be a replacement in the true sense of the word. The JLR brand at the moment is all about quality, comfort, luxury and technical wizardry, not about delivering a great pile of horse manure across a field, sand and cement to a building site, or even an injured climber down a mountain. There are other, highly competent off-road vehicles to do that these days and they are called pick-ups. They are now comfortable to drive, enjoyable to own, and multi-functional. And they seem to be getting better and better, and there are a wide variety on the market, many of which are significantly cheaper than a similarly spec’d Defender and for many, much more enjoyable to spend a tough working day with. Perhaps the delay with the replacement of the Defender is a lot less to do with its design, and whether the ‘traditionalists’ will accept it, and more to do with the maths of whether the company can actually meet the challenge of the global commercial market. Will a ‘new’ Defender make commercial sense? Has the company missed the boat? Or is it even a boat it wants to be seen on, since the profit margins of Range Rovers, Evoques and Discoverys are pretty good and they can sell as many as they make it seems. Maybe it makes more sense to just build more of those and not bother to get their corporate hands dirty trying to match what the pick-up manufacturers are doing so well these days. Who knows? Time will tell.

This month we pick our best bargain 4x4s available (which doesn’t include a Defender) to help you decide which budget off-roader you want to battle through the coming change of season.

Here’s hoping you enjoy the issue.

**Nigel Fryatt, Editor**

## OFF-ROADING WITH US THIS MONTH



How far would you go to get a new Lada Niva? This month, Paul Guinness meets a man who went all the way to Beverly Hills! Celebrate with him on page 40



When Robb Pritchard goes off-road he certainly goes right off! This month he races across northern Russia for some 16,000kms! Start shovelling on page 52



Rob Hawkins meets the wide boys this month, the expert father and son duo that will build you some wide wheels for that extra rubber. Roll round to page 66



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# News & Views

INSIDE THE WORLD OF 4X4

## LET BATTLE COMMENCE

LAST MONTH IT WAS MITSUBISHI, THIS MONTH NISSAN UNVEILS ITS MUCH IMPROVED NEW PICK-UP



**ANYTHING YOU CAN** do... After last month's announcement by Mitsubishi of the significantly revised L200 pick-up, this issue we bring you Nissan's response; and it's obvious that an already competitive pick-up market has just got even hotter!

We heard from Mitsubishi that the L200 was its fifth generation, that the company had 60 years of pick-up production experience and total sales of 4.1 million vehicles. Phah! Nissan's repost is that the company has been producing pick-ups for 80 years, and sold over 14 million. Statistical jousting notwithstanding, this latest Nissan looks just as exciting a prospect as the L200, and is likely to give the commercial sales forces at both Ford and Volkswagen something to think about.

The new Nissan NP300 Navara is said to have 'Crossover inspired refinement', which will be interesting to experience since the existing model has always been a particularly 'car like' product when you get behind the wheel; a particularly good driver's pick-up. The exterior design has certainly changed, and confirms, to us at least, that as with SUVs, pick-ups are gently merging together in overall looks. The new Navara has those now familiar across the market angled headlights and bold front grille, much like the L200, the Isuzu D-Max, and the Toyota Hilux... It is certainly a

smart design, but then so are the others. Side on, the NP300 Navara even seems to have a nod to the L200's curved rear door treatment, as the door meets the rear load bed side.

Probably the most significant change comes under the NP300 Navara's bonnet as this pick-up gets a new engine. The previous model's rather thirsty 2.5-litre V6 power unit is replaced by an all new 2.3-litre dCi engine which is claimed to be 'up to 24 per cent' more efficient and 'the cleanest and most economical in its sector'. It will be available in two versions; a 158bhp power option and top of the range 187bhp, which comes with twin turbocharging technology. As you would

expect, Nissan claims that this significantly reduces emissions (compared to previous model) and improves economy. As yet, full details have not been released, the model being officially launched – as you read this – at the Frankfurt Motor Show. We look forward to getting the full story. The engine will be available with Nissan's six-speed manual or seven-speed automatic gearbox.

Off-road ability remains a significant characteristic of this pick-up, and is said not to have been compromised by the new five-link rear suspension for the Double Cab version, despite this having been done to improve on-road ride and handling. The existing Navara







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CLASSIC**  
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**BARGAIN  
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always appeared to us to have something of a firm, fidgety on-road ride, so we look forward to checking this one.

The King Cab version has 'substantially' updated rear leaf springs, which are claimed to improve the Nissan's rear wheel departure angle by 3.1 per cent, while also reducing road noise.

The previous Navara's towing capacity was 2600kg, significantly less than the rest of the market. The NP300's announcement claims that the new model's 3500kg is 'class-leading'. However, the Isuzu D-Max also claims 3500kg, and the new Mitsubishi L200 a stunning 4100kg. Whatever the claims, it is a significant boost in ability, which linked with the payload now being in excess of one tonne (and load bed now longer in the King Cab option) will certainly appeal to those who want a tough and capable workhorse pick-up.

Interior improvements are significant in the NP300, with the facia completely redesigned (we always commented that the previous model was a touch dull inside). Spinal support

front seats are new and 'have been engineered using technology inspired by NASA', we look forward to learning more.

Safety features include Around View Monitor, Forward Emergency Braking, plus Cruise Control, Hill Descent Control, Hill Start Assist, rear view camera, parking sensors and keyless entry.

As this is being written in advance of the official launch at the Frankfurt Motor Show, some of the actual details and figures for the new Navara have not yet been released. That includes any details of actual UK specification and all-important prices. The previous Navara has always been an expensive option in the UK pick-up market, so it will be interesting to learn where this new model fits in the listings.

With the new Toyota Hilux due later this year, with revisions from Isuzu and Volkswagen (see separate story) and the highly impressive sounding new Mitsubishi L200 soon to be with us, if the UK pick-up market has seemed competitive in the past, then it seems we ain't seemed nothing yet!



As with SUVs, it seems that the latest pick-up designs are following the similar trend of frontal treatment. Looks good, but what happened to being individual?



## ISUZU AND VW RESPOND...

**AS NISSAN AND** Mitsubishi both unveil brand new models, the established order look to have stepped up their offerings. Isuzu has announced a new UK-only edition called the Fury. This new model comes out when Isuzu records 2014 as its best ever year of UK pick-up sales with over 5500 conquests, and 2015 is already up some 30 per cent, making it the biggest market in Europe for the Japanese manufacturer. The Fury is a special edition with its Magna Red paintwork and a bespoke interior and it's on sale in the UK this September. Prices start at £19,999 (excluding VAT) for the six-speed manual and £20,999 for the five-speed automatic. As with all D-Max models, it comes with a five year, 125,000-mile warranty. We are following the story of one man's D-Max in our Project Pick-up (part two is on page 70 of this issue).

The Volkswagen Amarok has certainly established itself in the UK market as a high quality, refined and capable pick-up. Indeed the versions with the excellent eight-speed automatic gearbox are particularly impressive and the model ran this year's *4x4 Magazine* Pick-up Of The Year Ford Ranger very close for the overall title. The latest version from VW is the Atacama, which comes with even higher equipment levels, including Bi-xenon lights, Vienna leather trim and 19 inch wheels as standard. Of course, this extra equipment does come at a price and the six-speed manual version of the Atacama is £26,850 (excluding VAT) and the automatic version a thumping £28,695 (excluding VAT).





# TOYOTA'S LEGO LAND CRUISER

**COMING TO A** children's toyshop near you? Well maybe. Pictured here are examples of the 1700-piece Toyota Land Cruiser that has been built by an Australian enthusiast called Matthew Inman. It seems that Matthew doesn't get out much and has a history of making Lego models of 'real cars' for his children. Before that, apparently he was

something of an off-road fan, since the 40 Series Land Cruiser was actually his first car. You have to admit, that the model obviously lends itself to a design made from the Swedish company's ubiquitous building blocks. Indeed, it seems that quite a lot of people agree and Matthew is running an internet campaign through his blog to get

support from 10,000 people so that he can then submit the design idea to the Lego board, which could then decide whether to make it into an official model. If you go to <https://ideas.lego.com/> you can 'like' the design. As we close for press, the total had reached 7178. Well on the way to being in the shops some forthcoming Christmas.

## AUDI PUTS ELECTRIC SUV INTO PRODUCTION



**THE FRANKFURT MOTOR** Show will see the launch of Audi's first ever purely electric SUV going into series production. The Audi e-tron quattro concept has been designed from the ground up as an electric car, and it's powered by three electric motors, one for the front axle and one each for the rear wheels. The artist's impression shown here is a vehicle in length slightly longer than a Q5, and less than a Q7. It is claimed to have a cd value of 0.25 making a very slippery shape, and giving it a claimed range of 310 miles. Obviously this is an on-road all-wheel drive and not an off-roader, but just maybe the sign of things to come. There are still many that feel the ultimate off-roader could well be one that is powered by an electric motor driving each individual wheel.

## WARNING: 475BHP ZULU ON WARPATH

**WE HAVE REPORTED** on the modified Land Rover Defenders built by JE Engineering in this magazine before, commenting on how much we like the look of the company's Zulu models. Here we have details of the second generation of this range, called the JE MotorWorks Zulu2, more simply called the 'Super Defender'. Indeed, JE claim that this 'could well be the world's fastest Land Rover'. The reason for this claim is that under the bonnet is a JE tuned Land Rover V8, supercharged to develop some 475bhp and a whopping 650Nm of torque, powered through a six-speed tiptronic gearbox. As you might expect, the chassis and suspension, not to mention the brakes, have all been upgraded.

"We've been re-designing and re-engineering Land Rovers for 40 years, to the extent that even Land Rover has bought the rights to some of the engineering, performance and technology ideas we've developed and deployed in our own cars," said David O'Connor of JE MotorWorks.

"We know how to make Defenders go, stop, steer and ride beyond the wildest dreams of most standard Defender drivers." Beyond the purse of most Defender drivers as well, with prices for Zulu2 Defenders starting at £149,500!





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# THE CLASSIC CLASSIC

**WE HAVE MENTIONED** before in this magazine that we feel now is the time for some 'classic' 4x4s to be produced, and praised. The present classic car market in the UK seems to think Triumph Heralds and Morris Marinas are some kind of significant design icons, and prices of rebuilt Ford Escort Mk1s seem totally ridiculous to us. How refreshing, therefore, that we have discovered details of the Range Rover Classic, restored by experts Kingsley Cars. These guys rebuild and restore pre-1995 Range Rovers and the model shown here has been meticulously restored for a customer in Germany – where demand for the early cars is apparently very strong. Indeed

there is also strong demand in Scandinavia for this model, particularly Norway, according to Damon Oorloff of Kingsley Cars. The most impressive thing is that while the car has been rebuilt to as close to original as possible, it has also had to meet the stringent German TUV regulations – something that the original production model might well have not ever managed! Certainly, from these photographs, this model looks considerably better built than the original press vehicle we drove back in the Nineties. Kingsley Cars is based on the A40 just outside Witney in Oxfordshire and has to be the place to go if you want a classic Classic. Check out: [www.kingsleycars.co.uk](http://www.kingsleycars.co.uk)



## And briefly...

► Mitsubishi reported a very successful July; with sales showing a 39 per cent increase over the same period last year. One of the strongest performers was actually the L200 pick-up, obviously a strong sales campaign before the new model is in the showrooms this September.

► Jaguar Land Rover's global growth continues with a letter of intent having been signed for a potential new plant in the Slovak Republic. A new manufacturing plant in the capital Nitra is the likely outcome.



► Honda's new HR-V has arrived at Bristol docks, with models being delivered to customers this month. The Japanese SUV arrived in Bristol from... well, Mexico obviously.



► Hyundai's new Tucson is now in UK showrooms. CAP Automotive has declared that residual values of the new model will be best-in-class, making it claim to be the 'most affordable vehicle in its class'. All very well to declare that before a single vehicle hits the road, we will be testing one in this year's 4x4 Of The Year

► Ever thought about improving your off-road driving? Or indeed going off-road seriously for the very first time, but would like some instruction? Next month is our Driving issue that looks at just those things and aims to help, and more importantly, encourage people to go out there and learn more about 4x4 driving off-road. You are never too old to learn, and if you don't fancy it, maybe you are just too old. We also have details of FORT – the Federation of Off Road Training – a new organisation that is aiming to improve the standard of off-road driving across the UK, and we are all in favour of that. The December issue will be on sale on 16th October (so don't panic, it's not quite Christmas yet) and we have full details of how you can get a discount on your favourite 4x4 magazine on page 80 of this issue.

## 4X4 OFF-ROAD QUOTE OF THE MONTH

**There were also big fissures to contend with and snow crunching under the tyres that sounds rather unnervingly like ice cracking. But after so long on Russian roads I seem to have become immune to the dangers.**

**SOURCE:** Intrepid off-road journalist and regular 4x4 Magazine contributor Robb Pritchard describing his latest adventure, racing 16,000km from Murmansk to Vladivostok in Russia. Full story starts on page 52



# **ATTURO**

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# Products

## WHAT'S NEW FOR YOUR 4X4?



### MILNER'S MITSUBISHIS

We have heard from the guys at Milner Off-Road that they have some new items on the company's extensive parts listings for Mitsubishi. These include oil filters for the Japanese manufacturer's automatic gearboxes, available at a very reasonable £12 (plus VAT), and rear ABS rings for 2.5TD and 2.8TD Shoguns, which actually come out at the same price of £12 (plus VAT). One other, very 'popular' Mitsubishi part are rear tailgate hinges for the L200 pick-



up – items that become very important for those how really use their vehicles for work rather than just play. Coming in at £17 (plus VAT) these are relatively cheap to replace, but tough and do the job. Of course, for those of us who use our 4x4s for leisure rather than work, might also like to know that Milner has a great new range of cleaning products from Fuchs Lubricants. These include alloy wheel cleaner, glass cleaner and the obligatory bodywork 'shampoo'. Milner Off Road also has the full range of Fuchs oil products, a company that they strongly recommend. Good enough for us. Give them a call if you have a query and make sure you say *4x4 Magazine* sent you. Tel: 01629 734411, or email: [sales@milneroffroad.com](mailto:sales@milneroffroad.com)

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### TOOLING UP

Keeping your garage neat and tidy is always difficult, but when you need to find exactly the correct tool, having everything stored away correctly can make life a lot easier! The team at Wolf has sent us details of no less than 34 products that they describe as offering 'tool storage solutions'. These offer secure storage and are ideal for the amateur mechanic and the professional. These include tool chests, step-up chests, roller cabinets and jobsite boxes, offered in seven ranges: Expert [26ins wide]; Expert Extra [36ins wide]; Professional [26ins wide]; Super Professional [42ins wide]; plus Home Workshop, Workshop Trolleys and Job-Site and Vehicle Storage [31, 36, 48 and 60ins wide]. Steel Workbenches in 1500mm and 2000mm lengths complete the extensive Wolf line-up. With prices starting at £49.99 (plus VAT) it's worth checking out the online store.

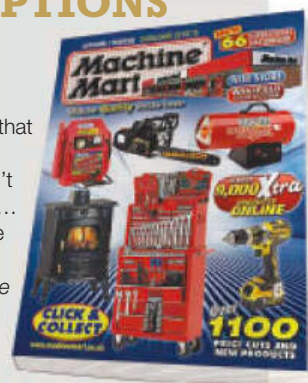
**Website:** [www.ukhs.tv](http://www.ukhs.tv)



### AUTUMN OPTIONS

It's the time of year when the latest catalogues are produced for us to pour through, looking at things that we probably don't actually need, but certainly wouldn't mind having in the garage... just in case! The first of the autumn specials that has arrived in the *4x4 Magazine* office is the Machine Mart catalogue. To say that it is jam-packed is something of an understatement, indeed Machine Mart claim there are over 15,000 items in there! Included for the first time is a new range of Clarke engine stands, battery starters and petrol driven pressure washers. Of course you need one...

**Website:** [www.machinemart.co.uk](http://www.machinemart.co.uk)



### VERSATILE MINI LAMP

A new mini inspection lamp is now available from Ring Automotive. The RIL82 Mini LED Lamp is designed for everyday use and perfect for the garage and the home, being light and easy to store. Although it's 'mini' the RIL82 Lamp actually has 18 LEDs that between them produce 100-lumen output, which is powerful. We also like the fact that it has a magnetic base, which allows you to fix the light and work 'hands free' – very useful. The light also pivots so you should be able to adjust to the perfect angle. Powered by three AAA batteries it is claimed that the lamp will last for 7.5 hours. Recommended retail price is £7.99. Check out the website for your nearest stockist.

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# Mini marvels

With SUV models soaring, the good news for our columnist is that we look like getting some exciting small 4x4s after all

**A**n astonishing statistic hit the motoring world recently. According to the Society of Motoring Manufacturers and Traders (SMMT), Crossover and SUV sales have grown by 88.5 per cent over the last 10 years. I won't go into my thoughts on these 4x4 labels as I have mumbled and grumbled about that before, but suffice it to say the market for vehicles that have some kind of four-wheel drive capacity at whatever level has reached the stratosphere.

Of course, we all knew that the 4x4 market has gone berserk in recent times, but actually seeing that figure in official print, from the people who really count, is mind-blowing. And growth isn't going to stop anytime soon, either.

Although the Toyota RAV4 has been officially cast as the founding father of the modern 'SUV' way back in the 1990s, it is now widely agreed that this recent explosion was inspired by Nissan's Qashqai. We loved it here at the magazine, but plenty of people thought it was a big mistake for the Japanese manufacturer to abandon the hatchback for the SUV genre. That new SUV sector has exploded and even during the harsh economic climate the SUV market has continued to grow, and, perhaps surprisingly, the luxury end experienced no setback in sales, in fact they couldn't have been healthier.

The 4x4 market is enjoying a heady time at the moment. Many models are being revamped, like the Audi Q series, Volvo's XC90, various BMWs plus there are new Mercedes models to name a few...

Manufacturers that have never bothered with the 4x4 sector before are now launching and planning whole ranges of SUVs – never mind just a single offering to show willing.

A while ago I bemoaned the fact that there were not enough small/compact 4x4s on the market, despite this sector having been reasonably healthy in the past. Having all these luxurious models is all very well, and if anyone were to offer me one at an affordable price I'd be straight in there with open arms, but the market is now swamped with the hi-tech, limos that are now cruising onto motor show stands; we need an injection at the opposite end of the 4x4 spectrum.

Well, the good news is that there are some new offerings being developed. Music to my ears. We have already been graced with Jeep's excellent Renegade, plus Fiat's Panda 4x4s are still doing well, joining the long-serving Suzuki Jimny. But Fiat's performance arm, Abarth,



may be adding another sub-sector to the smaller SUV class – the performance crossover. Fiat already has the 500X (Cross and Cross Plus models), which is a great little motor. It may have only limited 4x4 ability, we grant you, but it has a fun element that you just can't deny. The latest development is that Abarth is thinking about launching a version of the 500X to rival the so-called performance crossovers that are the Nissan Juke Nismo RS and the Mini Countryman JCW.

The Abarth 500X would sport a more aggressive look with a lower stance, chunky bumpers, larger wheels and deeper side skirts. There could even be a rear spoiler, bucket front seats and lots of sports dials and accessories in the cabin. Like the Mini JCW, we would expect the 500X to be all-wheel drive, and the talk is that it will be powered by the 1.75-litre turbo Alfa Romeo engine that will be fitted under the bonnet of the new Fiat 124 Spider – yum. (BTW, talking of the Fiat 500X, it is now available with a range of Mopar custom options – a benefit of having Chrysler Jeep as a member of the family – including decals, bonnet stripes, chrome packs, 18in alloys in all sorts of colours for the petrolheads and also bike racks, detachable tow bar and ski-carrying roof bars – that sounds more like it!)

These Nissan, Mini and the expected Abarth models represent this new smokin' end of smaller SUV performance and provide lots of fun and entertainment on the tarmac: although, granted, off-road they will give us little, or nothing, to write home about. I don't really mind, I just enjoy the fact that we have another string to the SUV bow and as long as we maintain a healthy pack of 'real' 4x4s, I am a happy bunny.

In a footnote: what doesn't make me happy is another form of smokin' in motoring. From 1st October anyone caught smoking in a car carrying kids under 18 is liable for a £50 fine, which applies to both the smoker and the driver – so be warned. For a start this is going to be ridiculous for the highway cops to enforce as judging teenagers' ages is not the easiest job in the world, and there just aren't enough police about to deal with it anyway.

Mobile phone use was banned because it is dangerous and distracting; so is lighting up, so why not just ban smoking in vehicles, too? It's not pleasant for us adults to inhale fag smoke either for that matter.

If you are a smoker, pull over and get out to indulge your habit (and make your call at the same time). Actually, much better still, you should just give up! **Hils**



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**FIRST DRIVE**  
Discovery Ingenium

# A NEW LAND OF DISCOVERY

It's been a huge sales hit since it arrived in UK showrooms in January this year, but the Discovery Sport is being refreshed already for the 2016 model year – with the most noticeable improvement being the all-new 2.0-litre turbo diesel engine, dubbed Ingenium. We take a drive...

Words: Phil Weeden





It seems there's little Land Rover can do wrong at the moment – it's enjoying a product-led renaissance like no other car maker around. It's a momentum that started with Evoque but shows no signs of let up as, now, the company aims to develop the Discovery range. First up is the Discovery Sport, which replaced the respected Freelander 2. We drove it in the frosty climes of Iceland for our March 2015 edition, and we're behind the wheel again, this time to sample an all-new engine. It spearheads a host of tweaks for the 2016 model year that aims to make the Discovery Sport more efficient, more frugal with an improved model range and broader appeal to reach out to discerning luxury buyers and fleet, user choosers in equal measure.

The new diesel engine is more significant than most. It's brand new, built at an all-new £500 million facility in Wolverhampton. Not only has it created new jobs in the region, but this engine factory is capable of pumping out over 450,000 units per annum and its output will feature in many of Jaguar Land Rover's future product line-up. With the development of power train being more crucial than ever, it's paramount that JLR has control over this side of things. Who's to predict what engines we'll be using in the future: petrol, diesel, hybrids, fuel cell? Jaguar Land Rover knows that to react to such changeable market and legislative conditions, it needs to control the supply of its own engines. Ingenium is the first step in that process.

This 2.0-litre, four cylinder turbo charged diesel replaces the SD4 unit and is available in both 148bhp and 178bhp editions. Crucially, it enables Land Rover to offer a 129g/km (five-seater only) model at a new, lower price point of £30,695, around £1600 cheaper than the previous base model. This makes it a more compelling fleet purchase with a 23 per cent Benefit In Kind tax rating. That translates to a tax

bill that's £75 per month lower than the outgoing SD4. Expect a 2WD version with 119g/km at some point soon too.

Being made of aluminium, it's 24kg lighter than the outgoing SD4 unit but also has 17 per cent less friction and is therefore 16 per cent more efficient. The 148bhp version has just 129g/km CO2 while the 178bhp just 139g/km. The lower output model claims an average fuel consumption of 57.7mpg and both now have extended service intervals of 21,000 miles – although engineers admit that this interval is merely a guide and will vary depending on the type of usage the car is subjected to.

Ingenium's efficiency is down to a number of key features, some of which are bamboozling in their complexity but impressive in their intention. Computer controlled variable oil and coolant pumps but switchable piston cooling jets help optimise the efficiency of the engine. Combined with an electronically controlled thermostat and split cooling system, it enables the unit to get up to operating temperature more quickly and then reduces the load on ancillaries wherever possible. There are roller bearings on the cam and balancer shafts, a simplified cam drive system and an offset bore and low friction piston ring pack. The turbocharger has variable geometry while the exhaust camshaft timing is also variable. This is coupled to a low pressure exhaust gas recirculation valve, which feeds filtered and water-cooled exhaust gases back into the turbocharger; combined with fresh air, the engine can then operate at high efficiency with the lowest possible emissions. Indeed, it's claimed by LR engineers that with diesel exhaust fluid added (Ad Blue) over 90 per cent of particulates and 50 per cent of NOx emissions are removed.

## BEHIND THE WHEEL

The good news begins almost instantly: the diesel tone is instantly noticeable, but it's a very smooth idle. From the cabin it seems to emit about the same



**Above:** The new Discovery Sport is one of the first JLR models to get the new Ingenium engine; it won't be the last

**Below:** We have yet to seriously take the new Discovery off-road. It will, of course, be part of this year's 4x4 Of The Year test

noise as the old SD4, although engineers claim it is quieter. Whatever the truth, it certainly feels smoother. We're in a top spec, 178bhp, leather-lined HSE Luxury edition, priced at £43,000 on the road, but with £4475 of options including a £2500 entertainment pack; the incontrol connect setup; adaptive Xenon headlights and an electric deployable tow bar. In Indus Silver and wearing 20-inch 'Stormer Sparkle' alloys, the Discovery Sport looks elegant and understated. It could be at home at the polo club, the farmhouse or a city cocktail bar.

We engage drive in the nine-speed auto (six-speed manual also available on some models), and edge away gently from the glorious grounds of Eastnor Castle. The new engine pulls cleanly and smoothly. We're using gentle throttle inputs for the time being, to see if we can improve the 31.9mpg registering on the trip computer. It works, as it quickly recovers to 33mpg; while a colleague achieved a claimed 44mpg. Later in the journey, while trying to dispatch a couple of slow moving lorries on a B-road, we're left wanting a bit more poke. The engine might loosen up in time (ours had just 1400 miles on the clock) and the auto box does adapt its shift patterns to driving style, so it was probably still a bit chilled as our driving had been up to that point. Our advice if you're hustling along a B-road is to use the gear selector paddles, which enable you to keep the engine spinning sweetly, rather than relying on a tardy kickdown.

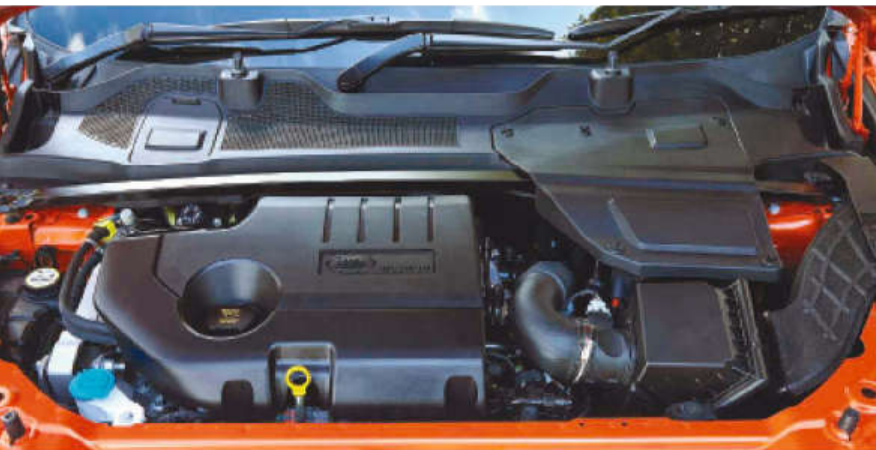
While this might seem sacrilege in an off-road publication, it's worth noting just how well planted the Discovery Sport is on the road. Even on really twisty stretches of tarmac, the Discovery Sport defies its size and changes direction like a rabbit. The steering is well weighted with decent ▶





# FIRST DRIVE

## Discovery Ingenium



◀ feedback from the surface beneath, but maybe lacks just a bit of a precision so typical of modern electric power steering systems. The ride is stiff but not too crashy while overall refinement is impressive. At motorway speeds, the Discovery Sport is purring at little more than 1500rpm. You'll notice wind and road noise over any engine noise, and even these are well suppressed.

There's 430Nm of torque in this model, which is 10Nm more than the previous SD4, and the car is definitely better meandering in the mid-range. It wants for nothing if you're in the mood to cruise along.

After a compelling on-road drive around the English-Welsh border, we're back to the 4500 acres of the Eastnor Castle estate to sample the Discovery Sport along just some of the 80-miles of off-road routes.

With the Terrain Response system

already well proven, we knew there would be little to trouble this Discovery Sport. The weather was fair, but rain in the previous few days had meant there was plenty of water and clay-ridden mud around. The various ruts, rocks and trenches that we traversed showed the Discovery Sport to be as capable as any Land Rover. Its wading depth of 600mm

**Above:** Amazing what a fancy paint job can do for what is a very conservative design

**Above left:** This is the important bit - but not much to look at, admittedly!

was put to good use, while the axle articulation through one section was very impressive; the electronics sometimes hesitating as it figured out where to redeploy the power from one spinning wheel to another that was still in contact with the ground. With the right amount of throttle inputs, the Discovery Sport claws its way through the most challenging terrains. It can therefore wear its green oval badges with pride.

So the Discovery Sport has just got a whole lot better. Having seen how good the Range Rover products are, it would be easy to be disappointed with some plastic trim in the less inspired fascia design. But what the Discovery Sport trades in design sophistication over its Evoque sibling, it more than makes up for with fabulous practicality and versatility. I can see many families enjoying the numerous benefits of the Discovery Sport. The new Ingenium diesel engine just makes the buying case even more rational than it was before. And that's great news for Land Rover. **4x4**

Engine	Drive	Gearbox	Power (PS)	Torque (Nm)	CO2 (g/km)	MPG
TD4 150PS 5 Seats	4WD	6sp Manual	150	380 @ 1750rpm	129g	57.7
TD4 180PS 5+2 Seats	4WD	6sp Manual	180	430 @ 1750rpm	139g	53.3
TD4 180PS 5+2 Seats	4WD	9sp Automatic	180	430 @ 1750rpm	139g	53.3



# POWER SURGE

While sales of the latest Cherokee have been impressive, Jeep has decided that the original engine was simply not good enough. We have had the chance to drive the latest version. It makes quite a difference

Words: Nigel Fryatt

**N**ow that's more like it. The first gentle prod on the accelerator and the response is obvious; the Jeep Cherokee now has an engine matching its class, price and character. Given that the new model has only been available for a single year, and that this new engine is not an additional option, but a complete replacement of the 2.0-litre unit unveiled at the launch, in automotive production terms, the change is something of a surprise.

Searching for the reasons for the change, it's important to note that it is certainly not because the Cherokee's first year of sales has been a disappointment. Jeep executives continue to proudly claim that the

There are no changes to the Cherokee's exterior for the 2.2-litre version. It's a good looking SUV

company has now had 23 months of consecutive sales growth (making a rod for their own backs, potentially, since that may not continue ad infinitum). In the UK, back in 2006 the previous Cherokee model had three per cent market share of its class. Of course, a few years later the world slumped into recession and Jeep's very existence was questioned. It's great to note, therefore, that for 2015 the company claims that the new Cherokee will once again take three per cent of its class market share in the UK. In total, globally, some 236,000 Cherokee models have been sold; not a shabby figure, so why the need for such a significant change?

The launch engines for the Cherokee were versions of the 2.0-litre turbo diesel MultiJet II, available in two versions – 140bhp and 170bhp. This was an existing Fiat power unit and on paper seemed the ideal choice, especially when mated to the company's excellent nine-speed automatic gearbox. Unfortunately, when you got behind the wheel that decision didn't seem such a good one. We commented, in our June 2014 issue, that: "It's not a rocket ship by any means," and we were not overly impressed with its on road performance but since this initial drive was a brief one at the overseas launch in Italy, we wanted to wait until we tried the

Cherokee for a longer drive in the UK. First impressions and all that. However, when back in the UK we later commented, "it would be too strong to say this is a sparkling performer". Now, part of the criticism was a reflection of the fact that there was then, and remains, so much to like about the Cherokee. We like the styling, but even if that nose is too much so for some, the build quality, the specification and the general aura of the vehicle certainly raises it above the general 'SUV jelly mould' tribe of many similar available vehicles. We also like the off-road abilities of the Active Drive II version, coupled with the nine-speed gearbox. It was just that the first model was under-cooked in the power department, not just in the actual power figure, which at 170bhp appears reasonable for the class, but in general 'auto' road driving, you simply expected more.

Well, the good news is that you've now got it. The brand new 2.2-litre engine certainly looks better on paper, offering a smidgen under 200bhp at only 3500rpm, and a significantly improved torque figure of 440Nm at 2500rpm (up from 350Nm of the two previous options). On the road, however, even the briefest of experience tells you that things have improved. The new unit seems to match to the auto gearbox so much better than before. At times when





# FIRST DRIVE

## Jeep Cherokee 2.2 MultiJet

driving the previous model, we would resort to the 'manual' overdrive option for gear selection – not ideal when you have nine of them – but it felt that the vehicle itself was never quite sure which gear it wanted to be in, and although changes were smooth and almost imperceptible, the relationship between original engine and box was a bit like a Premier League football team having two good strikers who simply don't talk to one another. The extra torque of the new 2.2-litre model, however, means that sinuous country roads can now be driven with enthusiasm, and even when junctions, speed limits or farm workers taking up most of the road lead to regular and judicious use of the brakes, the engine will slow and then accelerate in a much more vibrant and progressive manner. It's smooth, very quiet inside the cabin, and seems to have now got a good relationship with the transmission. It's a significant improvement, for sure.

The new engine is actually built in the Pratola Serra plant, near Avellino in Italy and is surely destined to other future vehicles in the Fiat empire. It gives the Cherokee a claimed top speed of 127mph and a 0-62mph in just over eight seconds, with Combined fuel economy is 49.6mpg and emissions are 150g/km. It is claimed that the engine is 'supercharged by a novel variable turbocharger', which is actually integrated in the exhaust manifold. This actually reduces the engine's weight and improves the way it deals with the exhaust gas, which combined with the reduced combustion ratio produces reduced emissions.

As before, the engine is available in two power options, the 200bhp mentioned and a 185bhp option; both units are already Euro 6 compliant (to meet forthcoming emission demands). A little oddly, perhaps, the current 2.0-litre 140bhp engine will remain in the range, fitted to the base Longitude models (available in front only, and four-wheel drive). These models come with the six-speed manual gearbox, and would not be our choice.

At present, we have only been able to drive the 200bhp Cherokee in nine-speed auto spec and top of the range Limited trim. Interestingly it



**Above:** Not much different visually under the bonnet, but wait until you hit the road...

**Below:** Quality interior with specification upgrades



seems that some 70 per cent of UK Cherokees are ordered as high spec Limiteds, and it is expected that this percentage may indeed rise. The model we drove was also in Active Drive I specification, which is the on-demand, rear axle disconnect, four-wheel drive option and does not include Low Range. Given the improved torque and generally improved driveability, we look forward to taking the new engine off-road in Active Drive II format. Regular readers will remember that a few months ago we drove the Cherokee Trailhawk version in Morocco. Now this model comes with the US 3.2-litre V6 Pentastar petrol engine. Interestingly, while this Trailhawk version's engine has more power (270bhp) it actually has less torque than the new 2.2-litre turbo diesel (316Nm compared to the 430Nm). Off-road, in Trailhawk trim, the Cherokee is a very competent off-roader. We suspect that the extra torque of this new 'normal' model will be useful in the muddy stuff. What price we wonder for a future European Trailhawk Cherokee model using this engine and not the American V6? It's an interesting thought.

The increased torque also means that this Cherokee can now tow 2495kg, which is good for the class. Jeep believe that the competitors for this Cherokee are Volvo's XC60, the Audi Q5 and the BMW X3, which is a quality bunch. For anyone interested in having a decent off-road capable SUV, get the one with Active Drive II and it tops that group with ease.

The company has used the opportunity to revisit the specification lists for the models. Now while that can always be a great way to justify a price increase, you have to remember that this version has a new – and markedly better – engine. Learning that the quality of the leather in the Limited is

now the same as the Grand Cherokee doesn't seem a massive sales pointer to us. That said, we were intrigued, however, to learn that the new model now has a wireless charging pad for your smartphone – very useful. When compared to the previous 2.0-litre models, the new 185bhp model is only £285 more expensive than the version it replaces. For the top of the range 200bhp version, the Active Drive I is £485 more, while the Active Drive II version is only £185 more – effectively a price drop given the better specification.

The actual OTR prices are: 2.2-litre, Longitude, Active Drive I, £33,045; the 2.2-litre, Limited, Active Drive I, £36,795; and the 2.2-litre, Limited, Active Drive II, £37,995. The V6 Trailhawk model, which comes with the top off-road spec Active Drive Lock, remains at £34,865 – something of a bargain? All these models are now available to order from Jeep showrooms. Go for a test drive!

The rebirth of Jeep as a top four-wheel drive manufacturer under the umbrella of Fiat continues to impress. Jaguar Land Rover regularly gets the credits, but this Italian/American manufacturer is to be praised for actually recognising that the Cherokee's original engine was not really up to the job. That decision was made and a new engine designed and launched into the vehicle within a year; and that is impressive.

It is also intriguing, is it not, that both Jeep and Jaguar Land Rover have recently introduced two new SUVs in the Cherokee and Discovery Sport and both decided to replace the power units after only a short production run. While that's good news for any potential buyers now thinking about a new Cherokee or Discovery, you do have to feel sorry for any owners who have bought the earlier models... **4x4**



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# Tough choice

**From still-gleaming luxury limo to trail-worn mud-pluggers, the range of older 4x4s available just keeps growing. We pick 10 we feel offer the best value bang for your bargain bucks - plus a few mavericks!**

**TARGET LIMIT: £3000**

**T**he growing popularity of SUVs over the past decades means there's a huge selection of bargain priced second-hand 4x4s available, and just because they're old doesn't mean they're all rust-trap bangers. Constant improvements in build quality and rust-proofing methods allow many better quality cars to retain an almost pristine appearance after 10 years or more, and for a well-maintained engine 100,000 miles is no longer considered an end-of life achievement. With £3000 to spend you'll find many a smart family estate mixing it with potential hard-core

playthings, and many a Range Rover or Toyota Land Cruiser at that price will still have many years of reliable high-image family estate service in them, while even an older Mitsubishi Shogun or Nissan Terrano asking no more than £1000 could still be too good to trash off-road. On that subject, remember that not all four-wheel drives are cut out to be serious off-roaders, so our five-star ratings should help you pick a car that suit your requirements. Here's our current pick, in three categories - Premium, Mid-range and Compact - with a few other oddballs to think about into the bargain.



## **PREMIUM**

### **Jeep Grand Cherokee**

**OFF-ROAD:** ★★★★★

**ON-ROAD:** ★★★★★

**VALUE FOR MONEY:** ★★★★★

We've always considered the Grand Cherokee to be a good-value purchase, and that's particularly true for second-hand examples, since for a mere £3000 you're talking a high specification second generation Limited with the Mercedes 2.7 CRD engine, a car that sold for nearly £30,000 new in 2002 with a specification including leather upholstery, electric seat adjustment with heating and independent memory functions in each of the

two key fobs, dual-zone climate control, eight-speaker stereo with steering wheel controls, electrically adjustable and folding rear view mirrors, cruise control and rain sensing wipers.

If you're looking for an off-road plaything there are high-mileage examples going for under £1000 - some with close on 200,000 miles on them which has to be some sort of commendation for the engines, which in most cases at this level will be the 4.0-litre straight six or 4.7-litre V8, the latter being particularly desirable as a relaxed and torquey off-road power plant, and no thirstier than the old-tech petrol six. It is worth shopping around for an Overland which has the superb Quadra Drive system which automatically locks front and rear differentials when conditions get difficult; note that this was also available as a £600 option on Limiteds, you might be lucky enough to find one of these at a good price.

The styling of the second generation Grand

Cherokee was similar to the original but smoother and more aerodynamic, the leather-upholstered interior was just as opulently equipped, but more importantly improvements to the suspension settings and bushings meant mechanical refinement and road behaviour were markedly better. In this respect the Grand can't match the ride comfort of a Range Rover or Discovery, because although it has a thoroughly modern high-rigidity monocoque bodyshell it rides on heavy-duty beam axles, coil-sprung but not as supple as an all-independent arrangement. This does at least qualify it as a worthy hard-core off-roader as well as a luxurious family estate, not to mention a competent towing car with a 3500kg capability.

Earliest examples from 1999 included a turbodiesel, the 3.1-litre VM unit, but this is best avoided as it lacks the refinement of the later and more powerful 2.7 CRD as used in the Mercedes M-Class. All versions have a four-speed automatic transmission with permanent four-wheel drive and a low range transfer gearbox. At first only the Limited specification was available, but for 2004 a base Sport and upgraded Overland versions were introduced; the Sport has cloth upholstery and a simpler air conditioning system, but it retains the electric seats, electric windows and remote locking. The Overland was the range-topper, the enhanced specification including a CD autochanger and an electric sunroof.

One key special edition to look out for is the 60th Anniversary edition, introduced in July 2001 for a limited period, which was based on the 4.7 V8 Limited but adding the electric sunroof, a CD autochanger and metallic paint.

With the end of the run approaching, September 2004 saw three new top-specification variants on the scene, the Limited XS with 4.7 V8 or 2.7 CRD engine, the



Platinum with the 2.7 CRD and the HO Platinum with the 4.7 V8. These all have satnav, as well as the electric sunroof, plus heated door mirrors and parking sensors, but these will be rare at under £3000.

Even at this low price it's worth looking for a car with a good service record since the engines and particularly the automatic transmission are very sensitive to the quality of lubricants. The petrol engines - especially the 'bulletproof' 4.0-litre six - are generally reliable, and while the 2.7 CRD has Mercedes credibility, it can suffer the same problems as

any other high-mileage diesel such as worn injectors, fouled recirculation systems and failing turbo bearings. Make sure the engine starts instantly from cold, doesn't hesitate under acceleration and idles smoothly. It's more important to ensure that the transmission works properly, look out for delays in gear selection, excessive engine revving between changes and excessive whining noises. One symptom is a reluctance to select first and top gears, so the car pulls away in second and doesn't go into its overdrive top when cruising, definitely one to avoid.



## Mercedes Benz M-Class (1998-2005)

**OFF-ROAD:** ★★☆☆☆☆

**ON-ROAD:** ★★★★★☆

**VALUE FOR MONEY:** ★★☆☆☆☆

The M-Class is nominally a rival to the premium Land Rovers and Jeep Grand Cherokee but has a very different feel to it, with very little in the way of adventurous off-road styling and a sleek but rather bland body and uncluttered interior that makes it seem more like an MPV than an SUV. While on that point it's worth noting that some were kitted out as seven-seaters, but don't buy one until you've checked that the seven potential occupants can all sit comfortably inside - we don't think that will happen because the interior just isn't that roomy.

The promotional material at the launch emphasised its capability as an off-roader, but in spite of its excellent permanent four-wheel drive system, low range gearing and in some versions height-adjustable suspension, the M-Class is not a car that takes kindly to mud-terrain tyres and winch bumpers so don't consider one, even at a budget price, unless it's purely for use as a road-only family estate. As a road car we liked the Mercedes from the start, praising the ride comfort from the all-independent suspension and the light but balanced steering, pointing out in an early road test that it seemed very reasonably priced compared with, for instance, the similarly road-biased BMW X5. All versions of the

M-Class have a good basic specification, including climate control, electric seat adjustment and remote central locking, while the SE has enhanced interior materials including burr walnut inserts. The Sport model has 19-inch alloys, extra chrome trim outside and Alcantara leather and aluminium trim inside. Even so, first buyers will have added a whole range of luxury extras in some cases adding well over £10,000 to the original purchase price of their car, features that now simply add to the value of buying one secondhand at a knockdown price. Look out for leather trim, the Designo two-tone upholstery with wood trim originally a £4420 option, also the electric sunroof - find one with the glass sunroof, the louvred one had a tendency to jam and is expensive to put right. Bose sound systems, perhaps with boot-mounted CD autochanger, satnav and cellphone preparation were popular upgrades, some will have bi-xenon headlamps, resist one with the external spare wheel carrier, it restricts the rear view when you're driving.

With £3000 to spend you'll find yourself choosing from a wide range of early-generation cars dating from anywhere between 1999 and 2005 depending on mileage and equipment, most of them with the 2.7-litre turbodiesel engine, though for better refinement and performance do consider one of the smooth-revving 3.2-litre or 3.7-litre petrol V6 variants. An interesting indication of how depreciation can hit luxury cars is how little dealers are willing to offer as a trade-in value on what ought to be seen as a desirable premium SUV, even more than 10 years on. As a result you'll find large numbers of higher-mileage older

ML320 and ML270s being offered for sale by private sellers. Buying privately can be advantageous if you take the usual precautions such as making sure the registration certificate matches the name and address of the seller and making sure it all runs well on a test drive.

The interior of the ML is unquestionably opulent, particularly in the higher-specification SE versions, yet compared with the Range Rover it seems rather blandly styled. No matter, since the driving position is quite natural and controls are all well placed, higher specification models featuring a whole raft of fingertip controls on the steering wheel, on some models this includes paddle-shift buttons for the automatic transmission. You can't expect an old car at this price to be in perfect condition, but there was always some concern about the assembly quality of this American-built vehicle, so look for excessive sagging of the seats and attempts to hide or bodge dodgy trim and upholstery fabric. The 2.7 CRD turbodiesel is the engine of choice if economy is important, though as even with an oil-burner make sure it doesn't blow excess smoke on acceleration which could point to worn injectors or a failing turbocharger - it could equally point to an aftermarket performance upgrade, smooth, quick acceleration will tell you but reject any car that feels sluggish, hesitant or jerky. The transmission on the turbodiesels also has to handle that low-rev torque so make sure the six-speed manual shifts smoothly and the clutch takes up progressively; similarly if the five-speed automatic is fitted check that it doesn't slur changes too much and responds properly to the Tiptronic-type override. ➤





## BUYING USED

### Top Ten Bargains

# Mitsubishi Shogun

OFF-ROAD: ★★★★★

ON-ROAD: ★★★★★

VALUE FOR MONEY: ★★★★★

We've always considered the Shogun to be a bit overpriced, since it's a vehicle with a reputation that somewhat embellishes reality. Even in its sleeker third generation form from 1999, the Shogun was always less refined and more cumbersome to drive than many of its rivals, yet its popularity - originally spurred by the realisation that it offered a more reliable and cheaper alternative to a Range Rover - continues unabated to an extent that your £3000 is unlikely to get you anything newer than a year 2000 model and with 150,000 miles on it at that; even higher-mileage previous generation (and more truck-like) models can command over £1000. Nevertheless the post-1999 Shogun has appeal for its more aggressive Dakar-inspired styling, particularly in the short-wheelbase version, and in the seven-seater functionality of the long wheelbase estate.

This was the first Shogun to shrug off the conventional off-road structure and instead of a separate chassis and rigid axles it boasts a monocoque bodyshell and all-independent coil-sprung suspension, along with rack-and-pinion steering the result being a more compliant quality of ride and sharper steering response. The Shogun is quite car-like to drive, though some might find the powered steering a little too light. However, the big estate rides comfortably and corners without too much body lean. Both diesel and petrol variants are lively performers, though the V6 needs to be revved to give of its best, while the strong mid-range torque of the diesel calls for fewer gearshifts to regain speed after a tight bend, making for more comfortable overall progress. It is also a better engine for off-roading, with torque peaking at 2000rpm. A five-speed

manual transmission was standard, though an automatic was an option, some were four-speeders, others had the newer and more desirable five-speed box, so check the transmission before buying.

The Super Select four-wheel drive system is arguably more complex than it need be, particularly in a car that is unlikely to venture off-road, but it has appeal to gadget-lovers; for this generation a quieter chain-drive transfer box is used. In terms of straightforward off-road traction the Shogun is unstoppable, but it does lack ground clearance and the long wheelbase estate has a debilitatingly long overhang limiting its capability in tortuous terrain.

Equipment on all models is good, even the base GLX has tilt adjustable steering column, alloy wheels, electric heated mirrors and a four-speaker stereo, while the GLS adds a roof spoiler, body side-mouldings, front fog lamps, headlight washers, automatic air-conditioning, cruise control and height-adjustable driver's seat. From 2001 the Classic replaced the GLX and Equippe replaced the GLS, while a new range-topping version, the Elegance, was introduced. Look out for the later Field, Animal and Warrior special editions, though these will be rare at under £3000.

The bold exterior styling of the Shogun is reflected in the interior with its heavy dashboard featuring a massive centre console

giving the driver a feeling of being tucked into a cockpit, the comfortable and supportive armchair seat helping to enhance the driving experience. It's nevertheless a roomy vehicle, with plenty of elbow room and headroom. The rear bench in the five-door is shaped to take three adults and has reclining backrests, with very little in the way of a transmission tunnel to make life uncomfortable for a central passenger. The Shogun stays good to 4x4 tradition in having the spare mounted on the sideways-opening tailgate, and so has good boot space, easily enough to accommodate the extra fold-up seat, which can be removed to leave a useful underfloor storage space.

In spite of its reputation, the Shogun isn't totally infallible, listen for the groan of worn wheel bearings and the click or rumble of worn CV joints on the front axle, check for oil leaks from the rear differential and check the state of the brake discs as well as pads, which wear quickly especially on a car that's been used for towing. Engine failures are not unknown, check for signs of 'mayonnaise' under the oil filler cap hinting at the possibility of impending gasket failure, and make sure the timing chain and its tensioners have been replaced on schedule - if you can't be sure on a higher mileage car have the job done yourself as soon as possible, because a slipped timing chain can wreck the engine.

It may be ugly, but there's no doubting the value for money of this roomy Korean estate. What attracted many to buy this wacky newcomer of 2001 was the very attractive pricing - the Santa Fe was pitched competitively against smaller SUVs such as the Land Rover Freelander and Toyota RAV4 while also offering an extraordinarily high equipment specification with even the base

versions boasting alloy wheels, air conditioning, electric windows and electric sunroof along with driver and passenger airbags, while the 2.7 V6 range-topper has leather upholstery and heated electrically adjustable seats, CD system and climate control as well as side airbags, and you needn't trouble your bank account for more than £500 to acquire an early example, certainly no more than £1000 for a well-maintained low-mileage example from 2002 or 2003.

Don't make the mistake of assuming that a second-hand Santa Fe would make a cheap high-fun off-roader for some serious play-day mudplugging, because although the four-wheel drive is permanent, there's no low-range gearing and the epicyclic differential puts 60 per cent of the drive to the front wheels which is a good balance to ensure stabilising understeer in fast on-road driving, but can cause erratic behaviour in delicately slippery off-road conditions. The Hyundai is a monocoque design so there's no separate chassis to cushion the body from



## MID-RANGE

# Hyundai Santa Fe

OFF-ROAD: ★★★★★

ON-ROAD: ★★★★★

VALUE FOR MONEY: ★★★★★





off-roading knocks and scrapes, and the suspension is a road-biased all-independent struts and coils type, which means it doesn't have the sort of articulation or ground clearance enjoyed by purpose-built off-roaders. However, as a well-priced high-specification comfortable family-sized urban SUV it's a hard package to resist. First offerings gave a choice of 2.4-litre or 2.7-litre V6 petrol power, with a 2.0-litre common-rail turbodiesel joining the range just weeks after the launch, though the more desirable version is the tweaked CRDT introduced in 2004, not more powerful, but smoother-running and more economical and with lower CO2 emissions, fortunately your £3000 should easily get you into a low-mileage, well-maintained run-out model from 2005.

The Santa Fe is a delightfully sweet drive on the road in V6 form. Mated to a four-speed auto with trendy sequential shift facility, the 2.7-litre 24-valve unit pulls strongly but does exhibit an urgent edge as revs climb, if there's a downside it's that the steering has a rather

vague feel about it - the car handles reasonably well, but the steering feels remote and lifeless. The 2.4-litre four isn't quite so successful, a dull performer in comparison and a little too harsh when pressed, there are a few early examples about but the later turbodiesel is the best bet, not an exciting performer but adequately refined and economical.

The interior, like the exterior, has a somewhat wacky edge to it with that clumsy-looking steering wheel, but the seats are comfortable, the facia and controls are well made and sensibly laid out. There's plenty of headroom and legroom for three abreast in the rear seat, which also has a reclining function, and the boot is capacious and accessible through a flip-up rear window as well as through the lifting tailgate.

Reliability is generally good but the engine and transmission do need proper maintenance, skimping on oil quality can result in excessive wear to the valve train, listen for any tinkling or rattling from the top end. If you're considering a diesel be sure to start it from cold, weakened

glow plugs are common, leading to starting difficulty. The 2.7 petrol V6 should also be checked from cold to make sure it starts well and runs without hesitation, because the fuel pressure regulator can leak. Check the water pump for leaks and make sure cam belt changes have been done at the required 60,000-mile intervals. Make sure the transmission engages without fuss, shifts smoothly and kicks down responsively. On a manual check that shifts aren't overly baulky or noisy, particularly in cars that have been used for towing - the 2.7 V6 Santa Fe is rated to tow 2.3 tonnes, the 2.4 petrol only 1.4 tonnes, so worn synchromesh from snatched downchanges may be a problem. The clutch should engage smoothly, any shuddering might indicate a looming and expensive failure of the dual-mass flywheel. Worn anti-roll bar bushes are common, resulting in clonking noises when running over potholes or when cornering, and wheel bearings, particularly at the rear, are prone to failure.

## Kia Sorento

**OFF-ROAD:** ★★★★★

**ON-ROAD:** ★★★★★

**VALUE FOR MONEY:** ★★★★★

The Sorento is interesting in that in spite of being styled for the city as a rival to the likes of the Land Rover Freelander and Nissan X-Trail its body sits on a proper separate steel chassis, which along with the low-range transfer gearing marks it as a practical off-roader. By the same token it doesn't have all-independent suspension; the front wheels are independent with coil-sprung double-wishbones, but the rear axle is rigid, and though also coil-sprung doesn't promise quite the same levels of ride comfort as its all-independent rivals. That's a small point, however. More interesting is that you can choose between a permanent four-wheel drive system, which is fitted to premium versions, or a selectable system as fitted to the base XE. There seems to be no logical reason for offering two different types other than the idea that people buying into a more expensive car would expect permanent four-wheel drive. Whichever system is applied the car comes with either a 3.5-litre V6 or 2.5-litre common-rail turbodiesel engine. Turbodiesel versions could have either five-speed manual or four-speed automatic - later upgraded to a five-speeder - while the petrol versions were only available with automatic.

The smooth, quiet performance of the turbodiesel engine is impressive, and although it's a little underpowered, with a mere 138bhp to hauling a car that weighs over two tonnes it doesn't add up to nippy acceleration, it offers relaxed cruising performance and good economy. The improved engine installed for the 2007 model year was a significant improvement with its 168 horse, but we've not seen any of these priced at £3000. Meanwhile the petrol engined alternatives are by far the



better drivers' cars, the higher fuel consumption countered by smoother, quicker performance as well as the availability of low-mileage models from 2006 within our budget.

All the Sorentos are exceptionally well equipped, the main reason for wanting a high-specification one would be to enjoy the heated electrically-adjustable front seats and the leather upholstery, or the satnav of some later models. The fact that they're all so well-equipped shows up on second-hand forecourts where there's often not much difference in price between XE and XS models, so it is worth shopping around for that extra bit of luxury, especially if you like the idea of permanent four-wheel drive. An early 2003 example with over 100,000 miles showing shouldn't cost more than £3000, though we've spotted low-mileage, well-maintained examples of this era asking £4000. There's no reason to pay that much, because there are plenty of examples on offer for a lot less.

There doesn't seem to be much of a price difference between turbodiesels and the V6, generally because the weaker demand for petrol power is countered by the generally lower mileage compared with most diesels at this price.

The turbodiesels seem to be robust and

reliable engines, one advantage being that they have chain-driven camshafts. The V6, unfortunately, does have a camshaft driven by a belt that needs changing every 60,000 miles so when buying a car with that mileage - or, as is quite likely on an earlier example with 120,000 miles showing, make sure the belt change has been done, or argue £300 off the asking price to cover the cost. Diesels do suffer the common problem of sticking or clogged EGR valve which can lead to smoky exhausts, poor performance and rough idling, a problem that is easy enough to remedy but since similar symptoms might be the result of worn injectors, faulty injector pump and failing turbocharger, it's as well to reject any car that doesn't run sweetly and blow clean exhaust. Gears have been known to shed teeth, so listen for clicks in each gear and make sure the manual doesn't jump out of gear. The selectable four-wheel drive system engages in response to a button on the dash, and sometimes takes a minute or so to engage and even longer to disengage. Make sure it works, a failure to do so could be nothing more than a poor electrical connection, but it could also mean serious transfer case damage. Wheel bearings also fail, listen for the telltale groaning noise as you drive.



## BUYING USED

### Top Ten Bargains

## SsangYong Rexton

OFF-ROAD: ★★★★★

ON-ROAD: ★★★★★

VALUE FOR MONEY: ★★★★★

This Korean maker once produced the ugliest cars in the world; the Rexton dating from 2003 is marginally less visually startling, but nevertheless has enough appeal to make it the joker in this particular budget pack because it offers big car comfort and luxury at a compact car price. Look at the specification of the 2004 270 SX we spotted with full leather upholstery, climate control, heated seats with memory function, electric adjusting and heated door mirrors, park distance control, cruise control, CD autochanger, traction control and satellite navigation, 90,000 miles and asking £2400. For £3000 you're looking at getting into a similarly-equipped 2005 or even 2007 model, albeit with high mileage, but it's hard to find a car offering that much space and equipment at the price. Some are even seven-seaters, though the rearmost seats are really for children only, nevertheless worth looking out for their added versatility. The interior doesn't look cheap, especially in the higher-specification ES and above which boast full leather upholstery, the only negative aspect being the very obvious plastic appearance of the so-called wood trim. The luggage carrying capacity is cavernous with the rear seats folded, the finicky might complain at the lack of oddment storage, and the cup holders that are too small to hold a cup. Otherwise it's a pleasant car to be in, with a good driving position and well-placed controls. Whichever version you choose the transmission is



automatic, a four-speeder with Tiptronic-style manual override. If you have £3000 to spend it's worth ignoring the earlier 2.9-litre turbodiesel, that's a noisy and lumbering 118bhp brute of a machine, better to pay the extra for one fitted with the later 2.7-litre 165bhp common rail unit. There is, of course, the lively 217-horse 3.2-litre petrol V6, very refined and a pleasure to drive behind, ideal if you're not planning a high annual mileage.

The Rexton appeared at a time when SsangYong wasn't sure whether they were offering an off-roader or a city-slicker SUV, so they hedged their bets by putting the Rexton's bodyshell on a traditional ladder-frame chassis, a ploy that gives it solid strength but robs it of some highway refinement. The suspension is all-coils, but rather heavy-duty in nature, so ride comfort isn't of the best, allied to rather vague, woolly steering. Its character improves once off the tarmac, however, where the suspension proves man enough to handle big bumps and ruts without jarring the interior. It has good approach and departure angles, and although it's a bit short of ground clearance it's not as low-slung as some of its rivals, plus quite good articulation, so can manage quite tortuous terrain without touching down. Here the 270Xdi engine is the unit of choice, since it has a beefy 250lb ft of torque, peaking at a stump-pulling low 1800rpm and staying strong to at least 3200rpm.

Four-wheel drive is a fairly simple system,

selectable and operated by means of a dash-mounted switch; four-wheel drive can be engaged on the move, but low range can only be selected when the vehicle is stationary.

Look out for examples of the cut-price 'base' E model, cloth upholstery but still well-equipped, if you're after a working vehicle with good towing capability, the Rexton is rated to handle 3500kg. Otherwise, for a more luxurious family experience, one of the specials of 2006, the S Sport with uprated satnav and smarter 16-inch Texas alloys, side-bars and steps, and the SE Sport with 18-inch alloys, would be more suitable. The 3.2 V6 and 2.9 TD engines are licence-built Mercedes-Benz units, and have the expected levels of reliability, though on the turbodiesel check that it starts easily from cold and doesn't blow excessive black smoke under acceleration, which could indicate worn injectors or even worn cylinder bores. The 2.7 is a more modern common rail unit and is sensitive to poor servicing, so reject a car that blows too much smoke or runs erratically. All engines have chain-driven camshafts. The automatic transmission always had a somewhat vague and floppy feel to it, but it should take up progressively and kick-down smoothly, avoid a car with a jerky or noisy change quality. Similarly the five-speed manual won't feel particularly slick and positive, but it shouldn't crunch through the gears, also avoid a car where the clutch needs excessive pedal movement to release.



## COMPACT

## Nissan X-Trail (2001-2007)

OFF-ROAD: ★★★★★

ON-ROAD: ★★★★★

VALUE FOR MONEY: ★★★★★

The X-Trail's styling may seem conservative, but what it lacks in the way of off-road charisma it more than makes up for as a particularly practical choice as a family car. First examples were offered with a choice of 2.0-litre petrol or 2.2-litre turbodiesel power, a performance improvement arrived two years later in the form of a 2.5-litre petrol engine and an upgrade to the common rail turbodiesel boosting output to a more effective 136 horsepower.

The X-Trail was sized to ensure that a

mountain bike could be easily accommodated on its completely flat load bay, while the ski-hatch opening through the rear seat back is big enough to take four snowboards. Since camping equipment, scuba gear, walking boots and the like are often wet, smelly and muddy the load area is covered in a hard-wearing and easily washable plastic material, which as far as most users are concerned serves just as well as a platform for suitcases, shopping bags and perambulators.

Petrol versions feature five-speed manual



gearboxes, with a CVT-type automatic optional on some specification levels, the diesels have six-speed manuals. When driving on tarmac in normal conditions the X-Trail is a front-drive estate; when four-wheel drive is needed it can be engaged at any speed by dabbing a button on the dashboard. It's a system tuned more for high-speed on-road stability than to ensure optimum off-road traction; the X-Trail is designed to get its occupants to where the action is happening, rather than being the focus of off-road action itself, which also explains the lack of low range gearing. Like others of its class the X-Trail is of monocoque construction with all-independent coil-sprung suspension with limited ground clearance and articulation. It's not, therefore, a car to consider seriously as a hard-core fun day off-roader.

The seats are comfortable and the driving position natural, though having the dials mounted centrally on the dash takes some

getting used to, it does at least leave a useful cubby in front of the steering wheel. The turbodiesel is quite noisy on tick over but growls in a pleasingly sporty manner once cruising, driving enjoyment enhanced by the crisp gearchange of the six-speed manual. The steering is pleasantly precise and handling impressively stable.

All the X-Trail's are well equipped with even the base S boasting remote central locking and electric windows, electric mirrors and the huge electric Skyroof, plus remote controls for the audio, though this is a basic single-slot CD system, so look out for cars with better aftermarket upgrades. A more popular choice is the mid-range Sport, which has natty 16-inch alloys as well as side airbags and the chilled drinks holders in the fascia, linked to the air conditioning. The SE adds climate control air conditioning, alloy wheels, alarm, cruise control and side airbags. Examples from 2005



are falling within our price limit, but beware that from the spring of 2005 the SE was also available in purely front-drive form, so make sure you're getting a 4wd version. The SE+ has the added sophistication of heated leather seats, while the popular SVE has electric adjustment for the front seats.

Pricing of all versions appears to be more dependent on condition and mileage than power source, but you should be prepared to pay a little more for a turbodiesel and a little less for the lustier but thirstier 2.5-litre alternative. On an older turbodiesel listen for excessive rattling from the front of the engine, suggesting a loose timing chain, a problem known to occur as the chain guide wears and eventually breaks up. Erratic running could be caused by clogging exhaust recirculation valves, a problem that can also eventually lead to turbo failure, make sure any turbodiesel you plan to buy starts easily and runs smoothly without hesitations. Worn synchromesh is quite common on manual gearboxes, make sure changes are smooth and crunch-free. The CVT automatic has a manual override function, make sure it works, not because you need it, but if it doesn't it may point to a looming more serious problem.



## Honda CR-V (2002-2007)

**OFF-ROAD:** ★★☆☆☆☆

**ON-ROAD:** ★★★★★★

**VALUE FOR MONEY:** ★★★★★★

What's good about the second-generation CR-V is that it retains much of the character of the practical estate original though with a more stylish appearance. It's a slightly larger car with a stronger bodyshell but also with more power, enhanced instrumentation and equipment and better ride and handling. Early examples all came with 2.0-litre petrol power, there's a good selection of these available second-hand in good shape and with reasonable mileage priced from £2000, more importantly within our £3000 budget you should be able to get one of the 2005 models with the 2.2-litre CTDi turbodiesel engine. Pricing, even more so than with other models, appears to depend more ➤





## BUYING USED

### Top Ten Bargains

◀ on condition and mileage than age, so you might prefer to consider an older car exhibiting less wear and tear.

The interior of the CR-V is rather drab, with the oddball exception of the centre console with its metallic trim and complex air conditioning controls. It sprouts what appear to be a pair of grab handles, the one on the driver's side turning out to be the handbrake lever, a wacky touch contrasting with the otherwise plain interior. There's also a surprising lack of oddment storage, and what there is, isn't that practical - there's an open shelf in the dash which sheds anything stowed there the moment the car accelerates. The lack of a centre console gives the interior an airy feel, but leaves the driver short of somewhere to store a phone or a bag of sweets. Otherwise

practicality is good, the rear seats for instance not only fold up to enlarge the cargo area but also have independent fore-aft and recline adjustment, they also drop flat to provide a load bay that's long enough to take a couple of mountain bikes. It does have rather fiddly load bay access, a two-piece arrangement whereby the rear window first pops up, then the lower door section, carrying the spare wheel, swings open sideways. It does at least allow smaller items of shopping to be popped in without having to open the entire door, useful if you've parked in a tight spot.

All versions are well-equipped, the SE includes air conditioning, antilock brakes and driver, passenger and side airbags, electric front windows, height-adjustable driver's seat, folding table between front seats and an RDS stereo with CD player. The SE Sport adds an electric sunroof, headlamp washers, alloy wheels and a hard spare wheel cover, while enhancements for the SE Executive include satnav.

The petrol engine with its variable valve timing is particularly pleasant to drive, since it not only revs and pulls well delivering quite lively performance, but also has surprisingly good low-rev torque, which is useful in awkward off-road situations where slow progress is required. Standard transmission is a smooth-shifting five-speed manual, some will have the four-speed automatic. On the road the CR-V has a comfortable ride, so much so that although the steering is light and direct the

car can feel a little vague in fast corners. The softish suspension can also make the Honda feel a little bouncy when driving over unmade surfaces, but otherwise it insulates the occupants quite well against more serious ruts and bumps on an off-road outing. Not that the CR-V cries out to be taken off-road, the four-wheel drive system is a "real-time" arrangement where the front wheels are driven most of the time with drive being fed automatically to the rears when needed. Besides, the suspension lacks articulation, there's no low range gearing nor advanced electronic aids such as hill descent control.

Things to look for include a weak starter motor, either insist a replacement is fitted or look for another car. High mileage cars can suffer from worn cylinder bores and valve guides, on a test drive watch for tell-tale wisps of blue smoke from the exhaust on acceleration or on the overrun. Make sure the engine runs smoothly without flat spots or misfires, usually caused by ECU glitches difficult to diagnose and expensive to repair.

A common problem is the degrading of the lubricant in the 'dual pump' mechanism in the rear differential, which results in groaning noises when turning on full lock, a problem that is often misdiagnosed as a fault with the steering. Caught in time the cure is simply a matter of replacing the lubricant. Check that the air conditioning works, as air con pumps have been known to fail.



## Subaru Forester (2007)

OFF-ROAD: ★★★★★

ON-ROAD: ★★★★★

VALUE FOR MONEY: ★★★★★

The Forester is an unusual crossover, not the usual estate-car-turned SUV. For most the name Subaru is synonymous with the high performance Impreza WRX with its rally car styling, 280bhp boxer engine and sophisticated permanent four-wheel drive system - then, out of nowhere, appears the Forester, a modest estate car with the most conservative styling ever applied to a new model, seemingly aiming it at older middle-aged gents with trilbys and tweed jackets, with interiors upholstered in cloth taken from the suits of even older gentlemen. Badged X (for 'crossover') and touted as a rival to the Freelander, Honda CR-V, Toyota RAV4 and others of that ilk, the Forester appeared as fashionable as a pigeon at a peacock parade. Yet under that desperately ordinary body lies the same drive train as the car that in its time showed the way in the World Rally Championships. The turbocharged XT has a beefy 174bhp on tap in its original 2.0-litre form, the later 2.5XT has a hefty 226bhp, giving it the power to out accelerate many a hot hatch, while since the undertray is pretty much the same as the Impreza's, the Forester also has almost unbelievably good high-speed handling and impressively comfortable ride on and off the



road. The non-turbo versions - slower but still a lot of fun to drive with their excellent handling and ride comfort - even have low range (with the manual gearbox) giving them, despite Subaru's refreshing reluctance to clutter the bodywork with chunky 'off-road' cladding, truly impressive off-road ability. Oddly, although the Forester is patently a Freelander rival, Subaru seemed rather more keen to push the car's performance credentials by offering a 'style pack' of front and rear bumper spoiler, rear roof spoiler and sill extensions as a £700 option which unfortunately did little to disguise the basically boring styling. The result is a car that looks like the back of a small bus but is a total joy to drive and, in non-turbo dual-range mode is one of the most competent off-roaders in its class. Hence there's no better choice if you want a practical compact estate with truly dynamic driving behaviour - whether it's on the road with the turbo or off it with the low range

gearing - as long as you don't mind the uninspired styling or, possibly, if you're in the habit of wearing a trilby and a tweed jacket and just happen to think the Forester's styling is the absolute bee's knees.

For all our mockery - and surprisingly since this generation lacked a turbodiesel variant - the Forester has proved popular, as is reflected not only in the wide range of cars available second-hand, but the wildly varying prices being asked for used examples, with £3000 buying anything from a high-mileage '02 X to a '06 XE with XTs, XTEs and Turbos inbetween, so it really will pay to shop around for the best-looking purchase.

Your first decision has to be whether you want normally aspirated or turbocharged, bearing in mind that the former still makes a sound family estate with good driving dynamics, and of course if you intend to do any off-roading with it the non-turbo manual is



the only one that has low range gearing. Whichever model you choose you'll find acceptable luxury, since all versions of the Forester are well-equipped, standard features throughout the range including air conditioning, electric windows, remote central locking and four-speaker stereo with a CD player. The XT gets alloy wheels, which are also part of the optional 'all-weather' pack for the X, which includes a huge sunroof, front driving lamps, heated front seats and cruise control. Most of the X versions we've seen appear to have had the all weather pack – you'll spot them by the big driving lamps in the bumper and the huge sunroof – so it's worth making sure you get

one with the full equipment package. Leather-trimmed special editions tend to command significantly higher prices, so much so that we'd happily do without the leather. Probably the most significant concern if you're buying an XT is to remember that the early examples had the racy but highly-stressed 2.0-litre engine, after '04 the more relaxed 2.5-litre engine was fitted, but even then it's worth finding the extra for an '05 model with the higher-performance engine, 226bhp up from the original 208. Reliability is better than many, though there have been some clutch and gearbox problems, make sure changes are slick and noiseless.



## Suzuki Grand Vitara (2005)

**OFF-ROAD:** ★★★★★

**ON-ROAD:** ★★★★★

**VALUE FOR MONEY:** ★★★★★

There could be two reasons for buying an older Grand Vitara, one being for use as a well-priced and reasonably comfortable compact family car, now made possible because early examples of the all-new sleeker and more refined 2005 model are becoming available for around £3000. Most of those we've seen are the three-door with 1.6VVT power, some with surprisingly low mileages, but there are some of the five-door estates around, with a choice of the 2.0-litre 16v petrol or the 1.9DDiS turbodiesel. All versions have impressive convenience and comfort equipment including remote central locking, electric windows, a stereo with steering wheel-mounted controls and climate control air conditioning. The '+' version has alloy wheels, heated door mirrors and driving lamps. The automatic, originally available only with the 2.0-litre petrol engine, added around £1500 to the original purchase price.

The other reason for wanting a Grand Vitara would be as a cheap and cheerful off-road plaything, but don't be tempted to buy one of

the cheeky-looking post-2005 three-doors as a serious mud-plugger, because it doesn't have low range gearing; the five-door does, but it would be a pity to trash one off-road when the previous generation Grand Vitara is much more at home in rough terrain. One reason is that for 2005 the Grand Vitara shed the separate chassis and opted for a monocoque bodyshell on an all-independent suspension, while the earlier model had a proper separate chassis and a rigid rear axle, making it a more sensible choice for hard-core off-road action. The one failing that model had was the lack of ground clearance, the good news is that Jimny Bits ([www.jimnybits.co.uk](http://www.jimnybits.co.uk)) do a choice of suspension lift kits for the Grand Vitara at a reasonable price, for instance under £500 for a three-inch hoist, though there's a limit to the increase in tyre size you can fit because the wheelarches are quite tight. Without doubt the best fun car in the range is the GV2000 Soft Top, quite rare but we have seen a few clean,



reasonable-mileage examples at the price. It's not a full convertible, just the rear part of the roof has a fold-away canopy, but the front-section sunroof can also be removed to give an almost completely open feel.

Though clearly aimed at rivaling the Toyota RAV4 and Honda HR-V, the Grand Vitara was always a cheaper option, one reason being that the only 'luxuries' included as part of the standard trim were a stereo, electric front windows and electric mirrors, though both driver and front passenger had airbag protection. Other refinements – including anti-lock brakes, air conditioning, central locking with remote, electric sunroof and CD player – were optional, so when buying an older car check what you're getting for the money. The upholstery and trim is a bit on the cheap and cheerful side, so expect to find worn and patchy upholstery and to hear a few rattles and squeaks on a test drive.

Just £500 should be enough to secure an early example for conversion to off-road use, though most will be petrol-engined, if you're not planning long mileages the 2.5-litre V6 is the one to go for, you might as well enjoy the much livelier performance than the dull 1.6, or the even duller early 85-horse 2.0-litre turbodiesel. With £3000 to play with, however, you'd be looking at a good selection of cars with the much more refined 107bhp common-rail unit, which not only also boasts much more torque but this peaks at a lowly 1750rpm, ideal for mud-plugging. The five-speed manual is the preferred transmission, the four-speed auto even when new seemed sluggish and on the 2.0-litre cars tended to shunt between third and fourth while cruising because the engine didn't have enough power to keep it in top.

The V6 petrol engine has a chain camshaft drive, but the tensioner has a habit of slackening so it'd be worth having it checked. The main problem to look out for on turbodiesels is the exhaust gas recirculation valve, which leads to poor and erratic performance, so look for cars that have had the valve replaced or at least make sure the engine runs smoothly and strongly. Start a turbodiesel from cold to make sure the glowplugs are working properly, if the indicator lights flash on and off look for another car. Oil leaks are quite common, sniff for the scent of burning oil on a test drive as a worn rear gearbox seal tends to drip oil on to the exhaust catalyst.





# MAVERICKS? What about these...



## LAND ROVER DISCOVERY

There could be two reasons why you'd want to buy a Discovery - either to get the feel of some of the high-class opulence the Range Rover second-stringer promised, or to turn it into a hard-core off-road plaything. With a road-going limousine in mind but only £3000 to spend you won't be in Discovery 3 territory, though you may find a few high-mileage Discovery 2s with the TD5 or uprated V8 engines; these are also a little less utilitarian on the inside and have a little more load space, but our choice would be to pick a well maintained original, many are available with reasonable mileage at that price. For a total off-roader, pay £500 for an early 90s example preferably with the respected 300tdi engine but make sure the cam belt's been changed on schedule; the V8's thirsty but a superb engine for playing off-road. Suspension lifts, winch bumpers and anything else you need are available to make it a hard-core off-roader and join the hundreds of other mud-splattered owners.



## MAHINDRA INDIAN

Now here's a piece of automotive history that must not be missed. A classic? Yes, of course we're joking: £3000 for a 100,000-mile Mahindra Indian, a car that was hardly worth that much new? It can only be because this particular model has been painted up to look like a wartime classic rather than something churned out of an Indian agricultural factory 50 years later. The Mahindra is, indeed, a straightforward copy of the later F-headed post-war Jeep, but for all that it doesn't have the classic feel of the original, even if only because the clattering 2.1-litre non-turbo Peugeot engine is a dog. Certainly the Mahindra has a perfectly good selectable four-wheel drive system with low range, so it'd serve very well as a rough and ready off-road funster, the breathless old Peugeot engine even works quite well in low range. Note: We also spotted a 1990 Mahindra Indian Chief still in its gleaming black original paint with removable doors asking £3500. Bargain or not, you decide?



## HYUNDAI TERRACAN

We seemed to like this wacky truck when it first appeared in 2003, which is a bit hard to understand in retrospect since the only thing in the Terracan's favour is that it was cheap. Well-equipped, but with a cheapish look to the interior but you do get air conditioning, electric windows and a six-speaker stereo. It's supposedly an off-roader since it has a separate steel chassis and a live rear axle, independent front suspension with coil springs all round and a workmanlike selectable 4WD system, but in practice its low ride height and lack of articulation limit it to tracks, and not very rough ones at that. The engine is a rumbling 2.9 common-rail turbodiesel, not particularly powerful so it takes over 13 seconds to hit 60mph. It's a steady tower, but limited to 2800kg. The good-value upside is that it's a big estate with a roomy and comfortable five-seater interior and you'll find 2005 examples available with less than 100,000 miles for under £3000.



## SANTANA

Why would you drive a rough-and-ready Spanish-built copy of a Land Rover when you could have the real thing? Mainly because the real thing will cost twice as much, and although the Santana is cheaper it will do pretty much everything an old Land Rover will do. The main advantage is the 2.8-litre Iveco turbodiesel, lustier than the old 2.5-litre bangers in early Land Rovers and matching the output of the later TD5; one reason it's cheap is that it's a basic workhorse with few trimmings and an old-style leaf-spring suspension front and rear, but it has excellent articulation and good ground clearance. Plus there's the huge load bay and high levels of anti-corrosion treatment to the steel and aluminium body and the separate steel chassis, while the roof is fibreglass, the only disadvantage being that it tends to make the interior of the car smell awfully plasticky.



## SUBARU LEGACY

Never understood why the Legacy didn't prove more popular - it's been described as the most sensible large four-wheel drive estate car of its time. It was a super SUV before anyone knew what an SUV was, and certainly a lot more practical than many modern cars claiming to be one. You can buy an early second-generation example from 2004 with 60,000 miles on it for £3000 but we'd be happier spending half that on a first-generation model which, we think, was better-looking, before the styling became all 'organic' and globular. Massive boot space, comfortable five-seater interior, good equipment and exhilarating road-holding from the rally-bred suspension and low-slung boxer engine, what more could you ask for? Permanent four-wheel drive and low range gearing give it excellent rough-track capability; pick a 200bhp 3.0-litre version.



## SUZUKI JIMNY

No way could we leave the Jimny out of this, £3000 will buy you a still-smart 2003-2004 JLX or high-specification Mode with under 60,000 miles, ideal as a compact city car that's easy to park and cheap to run, more to the point, £500 will buy you an older higher-mileage example that instantly becomes a high-fun off-road plaything. Because the Jimny looks petite and funky rather than rugged it doesn't instantly stand out as a competent off-roader, but in spite of its dinky little wheels it has excellent approach, departure and breakover angles and what it lacks in axle articulation it makes up for with its short wheelbase. Equipment levels aren't great, the on-road ride is choppy and performance from the 1.3-litre four isn't that exciting but its not meant to be a tarmac-burning sports car. Look out for the drophead version.



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## **BARGAIN 4X4S**

US Lada Niva

# THE BEVERLY HILLS BARGAIN

A five-year old Lada Niva is a rare beast in Britain, but this one's arrival via the USA makes it all the more interesting. We meet its enthusiastic owner

**Words and photography:** Paul Guinness







Little to make you think this was a special Niva - apart from the lack of rust, perhaps!

When it came to no-nonsense top-value 4x4s, the Lada Niva was at one time in a league of its own. Back in 1996, the last full year of Lada sales in the UK, you could buy an entry-level Niva for just £8395, undercutting even the (rather flimsier) Suzuki Samurai. It was a small price to pay for a Russian workhorse with real off-road ability, making it a popular choice among buyers who craved robust practicality rather than a trendy image.

The Niva hasn't been officially sold in Britain since 1997, although a handful of brand new examples do arrive here each year thanks to the determination of an independent importer going by the name of Mark Key. The latest-model Niva can be supplied for £12,799 all-in, which means it still offers good value in a market now dominated by style-led crossovers and SUVs. So when we spotted the 60-reg example you're seeing in the photographs, we assumed it was a Mark Key import.

Surprisingly though, it isn't. In fact, the story of this particular Niva is a whole lot more interesting, a tale that begins with its owner's previous Niva being written off by vandals: "I'd had an L-reg Niva as my everyday vehicle for about four years," explains 40-year old Richard Barnes, a freight train driver from Stourbridge. "But while it was at a local garage in early 2010, having its brakes worked on, thieves broke in and set fire to the garage, destroying every car inside."

Richard has always been a fan of cars from the former Eastern Bloc countries (which explains why he also owns a Trabant) and was determined to find a replacement Niva as soon as possible. However, as anybody who's

tried will confirm, finding an immaculate Niva for sale in the UK isn't always an easy task: "I just couldn't find a suitable replacement for my old Niva, until I spotted one for sale in the USA. It wasn't in an auction but was simply listed with a buy-it-now price of somewhere around £5200."

Finding a Lada Niva for sale in America is a rare enough event, this being a model that was never officially sold there. What made it even more unusual, however, was that this particular Niva was brand new, unregistered and had just delivery mileage. It was being offered for sale via Sixth Sense Productions, a Beverly Hills-based company that had acquired the Lada but – for reasons unknown – hadn't included it in any of its film projects. The Niva was surplus to requirements, couldn't be registered in the USA, and was therefore being offered to a worldwide audience via the power of the internet.

"There was a lot of forum talk about the Lada at the time," recalls Richard, "with many people assuming that the whole thing was some sort of scam. I mean, what was essentially a brand new Niva being offered for sale in Beverly Hills did seem a bit unlikely. But I was determined to find out more, so I contacted Sixth Sense's President, Richard Harding, who confirmed that the Niva was legit and that the sale was genuine. His company no longer had any need for the Lada, and so it was being advertised on eBay."

Despite the fact that Richard was able to speak with his namesake in the US and confirm the legitimacy of both the vehicle and the company selling it, he didn't make an instant decision to buy. A few days later, however, he did make an offer on the Niva once he'd





## BARGAIN 4X4S

### US Lada Niva

ascertained that the vendor would even arrange container shipping of the car to the UK.

"My first offer was turned down," explains Richard, "and as I was about to go on holiday, I didn't have a chance to do anything else about it. Not until I was at the airport anyway, when after a few beers it seemed a good idea to get online and make a final offer of £4600. Much to my amazement it was accepted, and I headed off on holiday having just bought a new Niva – even if it was 5000 miles away."

Much to Richard's relief, the seller of the Lada was true to his word and, once the bank transfer was complete, arranged for it to be shipped to Felixstowe. Sixth Sense Productions even included the cost of the shipping within that final sale price of £4600,

While a little dated in its design, the Lada Niva's 'square, boxy' shape does mean it's a good load carrier for its relatively small size



leaving its new owner with potentially the bargain of the decade – even with VAT and a small amount of import duty adding around 20 per cent to the total. But there was one problem: with this particular Niva not being to EU specification, registering it in the UK as a new vehicle was never going to be easy.

#### LONG PROCESS

Lada fans will no doubt be aware that the Niva is still officially sold in some European countries, including France. Pop across the Channel, head to your nearest Lada dealership and you'll be able to spend anything from €11,990 to €14,990 (which roughly equates to £8400 to £10,500) on a new Niva. And because your friendly Lada dealer will be registering it in France as a fully approved EU-compliant vehicle, you'll be able to drive it back to Britain and register it with the DVLA without any difficulty. But Richard's car was different, being a non-EU model with virtually nothing in the way of paperwork.

In fact, the only document that came with the Lada was an invoice from the seller to prove the purchase price... and that was it. With it never having been registered for the road anywhere in the world, there was no 'logbook' and no official certification whatsoever.

"As soon as the Niva had passed through Customs at Felixstowe and I'd paid the fees that were due, I had it trailered back to my home in the West

Midlands," recalls Richard, "carrying out as much research as possible into how to register it and use it in the UK."

The answer lay in an SVA (or Single Vehicle Approval) test, a system designed for imported vehicles that are less than 10 years old and which haven't been Type Approved for use within the European Union. But with Richard working long hours and with the demands of the SVA test seeming quite complex at first glance, he wisely chose to bring in some expert help: "A friend of mine recommended a company in Norfolk that specialises in imports and SVA preparation, so I had the Niva trailered there. The agreement was that the Niva would be fully prepared, SVA tested and registered for the road before being returned to me, which is exactly what happened."

Even with experts carrying out the hard work, however, the process was a long one. By the time the Niva was registered with the DVLA (as a 60-reg new vehicle) in October 2010, almost six months had passed since its arrival in the UK, the delay being largely down to the heavy workload of the company carrying out the modifications. The end result was well worthwhile, with the Niva being fully road legal by the time it was returned to Richard; but what had it cost to get the professionals involved?

"The final bill for all of the work, which included the SVA test itself, was





around the £1200 mark. To me though, it was worth every penny as it meant I didn't have to get involved with any of the complexities of what was required for the test."

In the end, the list of items that needed changing or modifying wasn't too extensive. A windscreen for an EU-spec Niva had to be located and fitted (fortunately one of the major windscreen replacement chains had one in stock), the speedometer fascia had to be changed from km/h to mph, non-compliant window tinting had to be removed, and a pair of rear seat belts was required. With a few other minor items attended to, the SVA test was passed without difficulty and the Lada was returned to Richard in a road-ready state.

"That was an interesting exercise," laughs Richard, "as I ended up carefully running it in for the first few hundred miles. The gearchange was incredibly stiff and awkward, but started to loosen up as the miles mounted. It did feel strange though, driving a Niva that was essentially brand new."

## RELIABLE MOTORING

Since then the Lada has covered almost 57,000 kilometres (the odometer still shows the metric reading), which means that Richard has driven around 35,000 miles in the five years he's had the Niva on the road. And in all that time it has proved to be utterly reliable: "I've only had to replace the odd service item, as well as the exhaust, but that's about it. It's never let me down and is obviously the perfect winter workhorse. When we had deep snow a couple of winters ago, the Niva never failed to keep moving – it was simply brilliant."

So after five years of 'new' Niva motoring, is it all good news? "For me, yes. But then I love the idea of a new car that's also a bit crap," laughs Richard. "So much about the Niva could be improved, but it's the same as it was in the 1970s. Take those old-fashioned door handles and locks, for example, which freeze up terribly at the first sign of winter – which seems bizarre for a vehicle built in Russia. And obviously even a new Niva is never going to be as smooth or refined as a modern 4x4, because that's the way it's designed and built."

The Niva does, however, come with a few mod cons these days, including electric front windows: "Ah, that's true," admits Richard, "although the driver's side hasn't worked for ages, so it kind of defeats the object. If they'd left the Niva with wind-up windows, it would have been one less thing to go wrong. Oh well, I guess you need a sense of humour if you're going to use a Niva as your everyday transport."

If the Lada's reliability has impressed, so have its running costs, despite the



"I couldn't find a replacement for my old Niva, until I spotted one for sale in the USA. It wasn't at an auction, simply a buy-it-now price of somewhere around £5200

fact that fuel economy isn't a strong point: "I've never bothered checking but I guess I'm getting not much more than 25 to the gallon," admits Richard, "maybe closer to 30 on a run." Surely though, he's paying a hefty price when it comes to insurance, bearing in mind the fact that it's a left-hand drive vehicle not officially sold in the UK? "No, not at all. I've been with Direct Line for years, and they've been happy to insure it from day one," insists Richard.

You might expect a Niva of such relative youth to at least be free of the corrosion problems that afflict most of the older survivors, but sadly that's not the case. Despite being an inherently strong design, a 21st century Niva's panels are as rust-prone as ever, with Richard's example showing signs of

corrosion below the headlamps, at the bottom of the rear wheelarches and on the back bumper, all of which will be familiar to owners of older Nivas: "It's a shame this is happening after five years of use," admits Richard, "but it's something you just have to put up with when you're a Niva owner! I'll get the worst areas attended to at some point, as I've no intention of parting with my Lada – and I'm determined it's going to last me."

It's easy to see the appeal of Richard's Lada. It might officially be a five-year old vehicle but in every real sense it belongs in another age, having changed remarkably little from its debut in 1977. It still has a distinctly agricultural feel, with even its on-road performance remaining leisurely by new-car standards, despite featuring Lada's latest 1.7-litre fuel-injected engine. But all of this simply adds to its charm, giving it extra appeal to anyone who mourns the loss of the archetypal keenly-priced 4x4 workhorse.

This one turned out to be an excellent buy, with the final bill for what was basically a brand new Niva coming to less than £7000 in 2010. Even taking into account the depreciation that's inevitably taken place since then, this is cost-effective 4x4 motoring at its very best. The Niva may be an old design that's crude by today's standards, but it's still perfectly functional – and, in this particular instance, still makes real economic sense. **4x4**

**Below:** Owner Richard Barnes is certainly a Lada Niva enthusiast!







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## BARGAIN BANGERS

Suzuki Arctic

# COOL RUNNING

Pick up a tatty Suzuki Vitara as your Bargain Banger and then visit FourWD Engineering where you can recycle it into a steel bodied Arctic off-roader

Words and photography: Rob Hawkins







**R**ecycling a tatty production vehicle with a new body has long been a popular approach within the kit car world, to extending its lifespan or creating something alternative. Surprisingly, perhaps, that has not often been the case with off-roaders, yet many 4x4 vehicles are ideal for this, thanks to their separate body and chassis, unlike shopping cars that employ a monocoque structure.

The Arctic from FourWD Engineering seems to hit the nail on the head, should you want to transform a humble looking SWB Suzuki Vitara into something a little more adventurous. It's an extreme pick-up with hints of Range Rover hybrid styling (*What, really?* – Ed), but all the benefits of Japanese

mechanical components.

The Arctic's body is made from galvanised steel and features a substantial roll cage. Underneath the new exterior, a short wheelbase Suzuki Vitara manufactured between 1988 and 2000 can be used. The Vitara has been a worldwide success story for Suzuki. It replaced the popular SJ that had already proved that Suzuki was capable of making a small off-road vehicle with on road ability.

Known as the Escudo in Japan and initially the Sidekick in the USA, engines for the SWB Vitara were petrol powered and included the entry level 1.0 and 1.3-litre four cylinders, but the UK seems to mainly be stocked with the larger 1.6-litre four cylinder. This initially produced 74bhp with 127Nm of torque ➤



## BARGAIN BANGERS

### Suzuki Arctic



◀ via its eight-valve cylinder head with multi-point fuel injection. More powerful 16-valve heads have been fitted, but the UK seems to have stuck with more of the eight-valve units.

Throughout the production life of the Vitara, subtle styling updates were incorporated. However, the overall dimensions and the mechanical components of the SWB version remained the same throughout the model's 12-year life.

Typical second-hand Vitara prices start at around £400 for an abandoned example, whereas a mere £700-£800 buys you something that is roadworthy with low mileage. It's quite often worth

buying a more expensive donor with clean bodywork, then selling off all the unwanted parts – hoods sell for around £200, wheels cost £50 each, bare doors and other panels can fetch around £100.

The build of an Arctic obviously starts with the removal of the Vitara's steel bodywork. The build manual recommends starting at the front, removing the battery, bonnet, bumper, wings, grille and lights. Then everything needs to be removed from the inner wings before they are cut and removed along with the front panel. Next, the windscreen and rear screen are removed, plus the majority of the



#### Above right:

Galvanised steel body with roll cage and separate forward hinging front end are the two major parts that make up the Arctic kit

**Left:** Stripped of its bodywork, this is how far the Vitara is dismantled before the Arctic kit is fitted

interior leaving the dashboard behind, before cutting through the base of the windscreen pillars and around the outer edges of the floors (the petrol tank should be removed, but is reused in the Arctic). After undoing a handful of chassis mounting nuts, a large section of the Vitara's shell can be removed, leaving a rolling chassis with the original steel floors and front bulkhead.

The only modification required to the rolling Vitara chassis is to move the battery eight inches inside the engine bay and if larger tyres are going to be fitted, a triangular section needs to be cut from the bulkhead and replaced with a steel patch. On fuel-injected engines, the standard induction system has to be replaced with a smaller aftermarket alternative such as an open cone, or for off-road use, a closed induction system with snorkel.

The new Arctic body and roll cage





## ARCTIC SPECIFICATION

**Donor vehicle:** Suzuki Vitara short wheel base three-door convertible or tin-top (1988-2000)

**Chassis:** Suzuki Vitara steel box section, unmodified

**Body:** Galvanised steel with Land Rover Defender wheel arch extensions

**Donor engines:** Usually 1590cc four cylinder petrol

**Gearbox:** Five speed manual, three and four-speed auto with two and four-wheel drive

**Front suspension:** Wishbones, coil springs and dampers

**Rear suspension:** Live axle with coil springs and dampers

**Brakes:** Dual circuit servo assisted system with front discs and rear drums

**Recommended wheels and tyres:** 15-inch Vitara steel/alloy wheels with 31x10.5-inch tyres

It depends on your abilities, but estimated build times for the Arctic are claimed to be around three or four months of 'spare' time

bolt onto six of the Vitara's body mounting points on the rear, along with the bumper mounts at the front for the forward hinging front end. The lifted look of the Arctic is achieved by fitting 31-inch diameter tyres, which can be wrapped around standard 15-inch wheels. With the standard Vitara measuring 3.63m in length, the Arctic is a little shorter at 3.5m. It is however, 17.5cm wider and 3.5cm taller.

The basic Arctic kit costs £1850, which includes the steel body with roll cage, two doors, side steps and aluminium chequered plate for the rear floor, load wall and sill area. Items not included, which can easily be sourced

elsewhere, include a set of Land Rover Defender plastic wheel arch trims, exterior lighting, catches and hydraulic rams for the front clam, and a pair of Defender door mirrors. Optional extras include a side-mounted tailgate for £120, a front mounted nudge bar for £80 and a windscreen and rear screen for around £200 (the Arctic can be built without any glass).

It depends on your abilities, but estimated build times for an Arctic are claimed to be around three or four months of 'spare time'... (shorter if you have more spare time!). A budget of around £2800/£3000 is thought to be sufficient.

**Above left:** 1.6-litre petrol engine is commonly found in the UK's SWB Vitara

**Right:** Front bulkhead modifications are required to squeeze 31x10.5-inch tyres inside the arches

**Below:** Interior retains the Vitara dashboard, pedals and centre console



The Arctic was originally developed by NCF Motors of County Durham, who have created a number of kit cars and self-build off-road vehicles over the last 36 years.

This year, the Arctic and the Discovery based Sahara were sold to Simeon Scruton, who runs FourWD Engineering. Simeon built a Sahara in 2008, which has since been his everyday transport. He soon built up a good relationship with NCF and its proprietor, Nick Findeisen. Working as a professional welder, Simeon felt confident he could take on the production of the Sahara and Arctic, although at present he is keeping his day job...

The Arctic seen here was awaiting the documentation from the DVLA to confirm its change of name and body swap. With no chassis modifications required, the conversion doesn't need to undergo an IVA test, but does need its logbook amending. So, although we couldn't test drive the vehicle on the public road, but there was a useful dirt track nearby to have some fun.

Getting into the Arctic is the first challenge. The increased ground clearance means the side steps





## BARGAIN BANGERS

### Suzuki Arctic



◀ along the sills are essential. If the doors are fitted, these add to the challenge, but can be swung open, allowing you to negotiate your way into the cabin.

It's worth the effort though, and there's no denying the fact that the Arctic is fun to drive. The 10.5-inch wide balloon tyres certainly alter the handling characteristics of the Vitara's suspension. It feels like an agile off-roader, begging to be driven along a greenlane or over rough terrain. This particular vehicle has the eight-valve 1.6-litre petrol engine under the bonnet, which feels sufficiently lively, but don't forget it doesn't seem to be particularly quick in a standard Vitara. The Arctic should be lighter, so you'll have fun!

As a off-roader, the Arctic seems to be an interesting conversion for a Suzuki Vitara and the pick-up styling has clean lines with no apparent awkward angles to it. It's practical with a rear load area and better engine bay access than the donor vehicle. Plus, the big tyres, roll cage, Defender arches and mirrors and accessories such as sill steps and a rear mounted spare wheel all help to create the image of a mass production conversion instead of something homemade. It could make an ideal 'Pay 'n' Play weekend fun machine, and of course if you were to tow it to venues, there would be no need, or expense, to make it road legal. **4x4**

**Below middle:** Rear load area is lined in aluminium chequered plate, supplied in the Arctic kit

**Below left:** Optional front nudge bar costs £80

**Below right:** With a blank canvas at the rear, there's space for a range of aftermarket lighting

## Costs:

**Base Arctic kit:** £1850

**Typical build time:**

3-4 months of spare time

**Total build costs from around:** £2800

## Contacts

FourWD Engineering

**Tel:** 07789 406201

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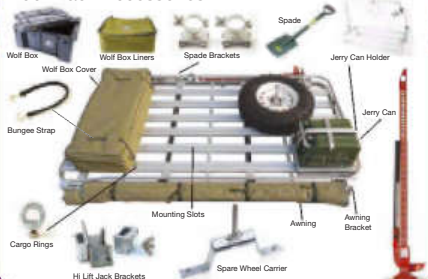


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# FAR & BEYOND

Russia is a place of extremes, and when it comes to off-roading, there's nothing quite as extreme as the Expedition Trophy...

**Words:** Robb Pritchard **Photography:** Robb Pritchard, Tatyana Parfishinoy, Danil Galitsky and Marina Gorshkova

**A** race all the way across Russia, 16,000km from Murmansk to Vladivostok, 16 days, mid-winter... But it wasn't just the words, numbers or temperatures that told me the Expedition Trophy was about to be much harder than I imagined. At the hotel in Murmansk, 300km north of the Arctic Circle, there were no namby-pamby insurance forms to fill in. They weren't worried about getting me medical treatment if I needed it, no emergency evacuation plans to fly a precious journalist to the nearest hospital facility, they just gave me a dog-tag with my name on it...

On the side of a wind-swept mountain under a giant orange lighthouse a priest wanders around in the pre-dawn dark offering blessings and sprinkles holy water on a giant pink bunny. This is not a surreal dream from drinking too much vodka, just the start, but the real craziness begins when the details of the first stage are handed out. If the fact that the teams would only see each other again after 1800km on sheet ice roads didn't sound tough enough, they also had to find check-points scattered around the frozen Arctic landscape. There were nervous grumbles that the time limit was only 52 hours. And this was just the first stage!

Just outside of Murmansk, the Frozen North, as the Russians call it. Only 15,990km to go!







But before they set off there was also a 'special task' to complete. A bank of snow was piled up on a frozen lake with the approach taped off into corridors for the 15 teams of two cars. To get over crews could use anything they had in or on their vehicles, so spades, sand ladders and winches were readied, as well as chainsaws! Momentum was the first choice but it was digging that mattered and a friend of mine, Sabin Akterina, dug so hard that she broke a bone in her hand! But the time she was in hospital was still time ticking away

from the team on the stage...

I got a lift south with the Russian Top Gear team and from the back seat looked ahead at the corridor of trees, which was unbroken for an incredible 900km! The only signs of civilisation were the run-down fuel stations staffed by surly old women whose only joy in life was to bark instructions for how the antiquated pumps worked, some of which dispensed 76 octane fuel!

Two days later at the shore of a frozen lake outside the town of Veliky Novgorod, the next task was handed

out. It's 2200km to the next meeting point, but to make it just a bit more of a challenge the check-points weren't in one place this time; teams were given a train timetable with 19 different routes criss-crossing the way east over the next two days, each carrying a stamp. In a café called Bummer, the team the organisers had put me with sat around a sticky plastic table, looked at the timetable for a few minutes, and then ripped it to pieces. "No chance," Igor said. "We'll go to Ekaterinburg the nice way. On the back roads!" But talk of back ways in a café with such a name was doomed from the start and a detour around a closed road confused the GPS so much that all through the night we were doing U-turns down forgotten tracks that no one had felt the need to plough. Something else I found quite shocking was that just 500km from Moscow villagers weren't sure how to give directions to the next town!

Another team not interested in chasing trains was Oleni and they chose the fabled Golden Envelope, inside of which were details of a task so hard I heard it talked about with a mixture of awe and dread. Complete it ➤

**Top left:** The strange and beautiful ice formations near the shore of Lake Baikal

**Top right:** How some of us thought the organisers planned the route...

**Above right:** Just a random town in a random place. Most town centres east of Moscow looked like this

**Left:** If you could stay awake to see it the scenery east of Baikal was stunning

**Below:** The event was tough on vehicles as well as people

## Ever eastwards, day and night. The Ural Mountains came and went. It faded into a blur where time and space seemed lost





## ADVENTURE

### Expedition Trophy

◀ and you wouldn't have to do any other task for the rest of the race. Fail and you are out. Oh, did I mention that first prize is a cool \$100,000? Forget any other 4x4 event you've ever heard of and consider this for a moment, just one task in this 16 day event was to drive south into Kazakhshtan and search for crashed satellites somewhere in the vast frozen plains. The area to look in was roughly the size of France... But this is Russia, 'Land of All Possibilities' as the sign at the border proclaims. The Land Rovers were parked and the team hired two helicopters to scour the landscape. And yes, after a day or so of trying they managed to find the satellites!

Ekaterinburg: after five days non-stop driving and the organisers congratulated surviving teams for completing the easy part. On the map I looked at how small the squiggle of the 4000km we'd done so far was compared to what was still to come. A five-hour re-group and then off again, but apart from the chronic lack of sleep and days of rushed truck-stop dinners, another factor began to come into play; the rough Russian roads were beginning to hammer the cars to pieces. The big tyres on the Team NEC Nissan Patrol GR I was travelling in were playing havoc with the steering, and then brakes failed, then the lights. "With the steering wheel shaking, not being able to see where you're going and not being able to stop, it does help keep you awake," my new friend Konstantin smiled.

Ever eastwards, day and night. The Ural Mountains came and went. A bright blue sky above a frozen



**Above:** Just call breakdown recovery. Where are we? Seven days east of Moscow!

**Below:** Somewhere out there is a satellite...

landscape, a snow storm through the night and nearly a week from a bed it all seemed to fade into a blur where all concept of space and time were lost. I looked out at the snow, sky and trees with no idea where I was or even what day it was. The Expedition Trophy is so incredibly epic that less than half way in it seemed utterly endless. Another road-side pee stop, a black eye from falling asleep with my face against the window and the GPS says 2200km to our next destination, turn left in 1724km. Somewhere there is a task to drive 200m through a field of metre-deep snow but everyone would rather sleep than dig. Then after 10 days, hearing stories of teams falling off the

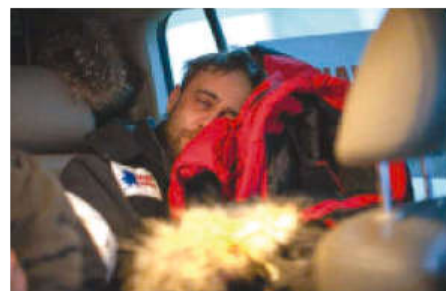
road because the drivers just couldn't stay awake, we somehow manage to get to Lake Baikal. Its mystical majesty is enough to wake us up and I see something I've missed for days; smiles! Cars are battered, eyes bloodshot and stubble has bloomed into full beards, but as we stagger around sharing coffee, stories and man hugs, there is a sense of achievement like no other event I have ever been involved in. And something else to celebrate, we are over half way!

But we've learned by now that there are no points for standing still and the massive frozen lake is the scene for another 'special task'. GPS points were scattered all over the metre-thick

There were big fissures to contend with  
and snow crunching under the tyres which  
sounds rather unnervingly like ice cracking







Above from top left clockwise: Land Rovers... Anything to get you forwards; the only bed you get!; Cold? Just a bit; Yes. He has a chainsaw. Better for cutting through chunks of ice than a spade; Everything, and I mean everything, was hard work; The only chance to catch up with people from other cars was either accidents or bridge building; Lots of work for the co-drivers... when they can stay awake; Snow and shovels. It got boring pretty quickly. Much more fun with a chainsaw!



# ADVENTURE

## Expedition Trophy



◀ surface but ice doesn't freeze smooth, near the edges are glass-sharp shards and of course the organisers chose places like this to put the points. There were also big fissures to contend with and snow crunching under the tyres sounds rather unnervingly like ice cracking. But after so long on Russian roads I seem to have become immune to the dangers.

And then another Golden Envelope task for the new team I am with, Sabine's friendly Team Yeti. Those not wanting, or needing, points headed off on the main road towards Khabarovsk, but we were to make a slight detour to follow a railway, the Baikal-Amur mainline, or BAM for short. However, a

**Above:** Inching across frozen planks. Not for the faint hearted

**Right:** There is no other crossing. The alternative is an 800km detour...

**Below:** The final test. Winching up a hill outside Vladivostok



'detour' in Expedition Trophy language is 1400km and they call this a 'winter road' because in the summer the mud is so deep that you simply cannot drive a vehicle there. And if a Russian says it is impossible, you know it must be hard! But judging by the number of cars we had to stop and pull out of the snow banks it was hard in the winter too. We were all so unbelievably far past the point I thought the human body would succumb to exhaustion, yet at every shoddy bridge we jumped out to pull frozen planks across the gaps or inch down to cross the icy river and then winch up the other side. And it was here that I came to see the true strength of the Russian soul. Each of the three teams doing the route in

convoy were endowed with such an incredible tenacity to keep going that I was constantly amazed. There was always someone sleeping on the back seats, bouncing around under a pile of coats, but it wasn't out of laziness, they'd soon be ruffled awake to take the wheel when the current driver could take no more. And even if there was time to stop there is no camping in -28C, so we never stopped. Not for three days, or maybe it was four... I don't really remember.

We'd began this frozen, white-washed odyssey an age ago near the border with Norway and 12 days later had a few moments to stop at the Chinese crossing. The moment was almost as surreal as the bunny blessing ➤



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FIND US ON





# ADVENTURE

## Expedition Trophy



**Top:** Any small lapse of concentration had serious consequences



**Above left:** Russian roads have a lot of accidents, so we found a way around a closed road by following a frozen river...



**Left middle:** Somewhere in the middle of Kazakhstan. Looking for a satellite

**Left:** Sunshine? I don't remember sunshine. I must have slept through that bit

**Right:** A few less people than started, but smiles at the end of the road at the Vladivostok lighthouse

◀ priest at the start, but we knew that there wasn't so far to go now. After what we had done so far, the two-day drive to Vladivostok felt like popping down the road to the shops!

Teams with the lowest number of points had been getting dropped out at each meeting point but the final task, which seemed laughably simple compared to what else they'd been through over the last two weeks, was to get up a hill where the \$100,000 waited. The difference in points each team had collected were converted into seconds. I was with Team NEC and watched with a quiet sense of despair as the other crews were flagged off ahead and all we could do was stand

there and watch. In fact the winning team had already hammered their winch anchors into the ground and got to the top before the marshal had even began our countdown, but we were in Vladivostok, we'd made it to the end and like no other event I'd done, watched, heard of, or even imagined, just getting to the finish was the most amazing achievement!

The winning team were called Cosmos, which I think is quite fitting for an event so completely out of this world! **4x4**

*Personally, I would like to give special thanks to Team NEC and especially Konstantin Rudenko and to Inga Prays for making everything alright in the end.*







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# WHAT'S YOUR 4X4?

The variety of four-wheel drive systems available on the market today is varied, not just in the vehicles using such transmissions, but the technicalities of how they all work. Ian Adcock takes a look at the history of all-wheel drive, what is available today, and what you may well be driving in the future

**F**our-wheel drive was once the domain of unsophisticated off-road vehicles that would seem as out of place at the Royal Opera House as a deep-fried Mars bar at a Michelin starred banquet, yet it is now an increasingly popular option on virtually every passenger car from a Fiat Panda to the fastest Lamborghini or – arriving this month – the most luxurious Bentley. The reasons why all-wheel drive grabbed some 11.5 per cent, or 7.51 million units, globally, in 2014, and is expected to grow to 12.8 per cent and 10.8 million by 2022 are almost as varied as the number of types of systems on the market. But to understand the growth in four-wheel and all-wheel drive, (and some major manufacturers see a subtle difference between ‘all’ and four-wheel drive), we need to go back in time to when taking power to all the vehicle’s wheels rather than just two began...

Like many automotive technologies – think aluminium structures, monocoques, front-wheel drive – four-wheel drive isn’t a recent phenomena. Most historians’ credit British engineer, Bramah Joseph Diplock as the father of four-wheel drive, having patented a system that included four-wheel steering and three differentials for a traction engine in 1893. While seven years later Ferdinand Porsche exhibited an vehicle with electric hubs in the four wheels at the 1900 World Exhibition in Paris for k.u.k. Hofwagenfabrik Ludwig Lohner & Co.

Dutch maker, Spyker demonstrated a four-wheel drive racer in 1903 and in



**Above:** The 'intelligent' four-wheel drive systems are more capable than some traditionalists might think

**Below:** The Audi quattro turned international rallying upside down when it arrived in 1980

the lead up to the First World War numerous American companies made 4x4s, including 15,000 Model B trucks by the Four Wheel Drive company of Wisconsin that were used by the Allied forces alongside Jeffrey and Nash Quad models.

The years between the First and Second World Wars saw both Daimler and BMW develop all-wheel drive cars but, surprisingly it is USSR vehicle maker, GAZ which might lay claim to producing the first all-wheel drive 'production' car, although this could be an exaggeration as much of its hardware was based on military hardware and the GAZ-61 was only available to the apparatchiks.

And it was of course the Second World War that spawned the ubiquitous Jeep, which in turn led Rover to launch its rival, the Land Rover at the 1948 Amsterdam Motor Show.

While in the UK, Land Rover faced some opposition from the likes of the Austin Champ it was left up to the Americans and, specifically, Kaiser Jeep, to introduce the 1963 Wagoneer with independent front suspension and an automatic gearbox, with the Rambler and Buick V8s a marked step forward in the late 1960s.

Meanwhile back in the UK, three Midlands-based manufacturers were about to unwittingly revolutionise the motor industry; admittedly for two they appeared to be products way ahead of their time. If Maurice Wilks crude outline of a Defender drawn in the sands of Anglesey gave birth to a legend, little did he realise that more than 30 years on his successor, David Bache would style a car that, alongside Issigonises Mini, would forever change the world of motoring: the Range Rover.

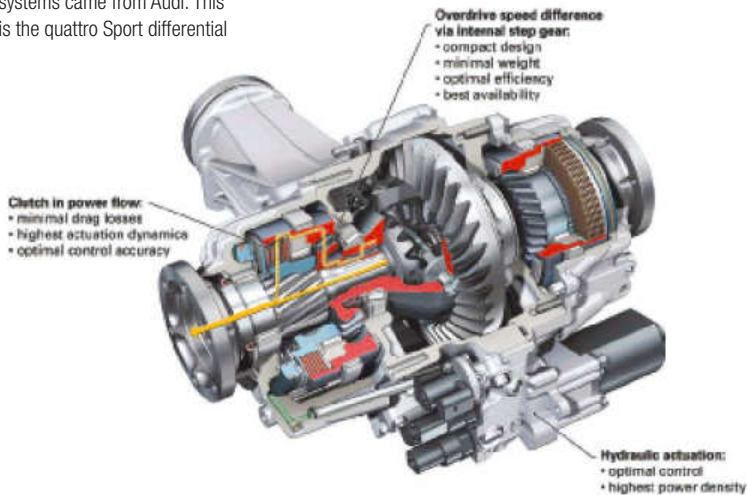
But if the title of 'Father of modern day four-wheel drive' is to be awarded to anyone then, surely, it is Harry Ferguson. An engineering genius who embraced technologies as wide apart as aviation, tractors and a hydraulic three-point linkage for ploughs that revolutionised farming – he was a technical polymath. Although it never reached production, the specifications for his 1956 R5 car are as contemporary today as they were advanced 59 years ago: four-wheel drive, Dunlop Maxaret ABS braking, three-speed auto, electric windows and a five-door hatch design that pre-empts the first Audi quattro Avant by 27 years.

It was Audi that turned the European motoring world on its head in 1980





One of the most significant 4WD systems came from Audi. This is the quattro Sport differential



when it unveiled the first quattro. This was, however, preceded in 1966 by the Jensen Interceptor FF with its 6.2-litre Chrysler V8 mated to a three-speed auto, all-wheel drive and Dunlop Maxaret braking, it signalled the way for future supercars even if only 320 were built.

Meanwhile in Japan at the 1971 Tokyo Motor Show, little known manufacturer, Subaru displayed a four-wheel drive 1300G station wagon converted from front-wheel drive to all-wheel drive using a hang-on design. The original Ferguson system was a permanent four-wheel drive with a centre differential that split torque 37 per cent to the front and 63 per cent to the rear, allowing for the difference in speed that occurs between the front- and rear-driven wheels when not travelling in a straight line. Whereas early Land Rovers did without a centre differential and, although it was a 50:50 split, the front drive featured free wheel to eliminate tyre scrub under cornering.

It was really the advent of new technologies such as the Haldex and Torsen differentials that broadened four-wheel drive technology from the agricultural off-roader into what has become the urban all-wheel drive technology predominantly employed today.

## ALL-WHEEL DRIVE FOR ALL

The downside of permanently engaged four-wheel drive systems are two-fold: weight and reduced fuel consumption through drag. A further side-effect was, that although, all-wheel drive delivered enhanced traction in a straight line, the car's cornering dynamic could be deceiving: while rear-wheel drive cars will tend into oversteer when pushed to the limit, or understeer in front-wheel drive, signalling to the driver to take the appropriate corrective action, splitting torque evenly between the two axles rarely gave that notice before all traction was lost.

That, of course, can be rectified by splitting the torque so there's permanent rearward bias, as in the original Ford Sierra XR4x4 of 1985 with its 37 per cent (front) and 63 per cent (rear) bias, using two viscous coupling limited slip differentials and shuffling the torque to which ever axle has the greatest grip.

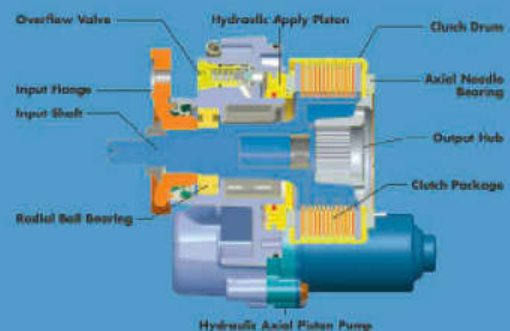
It has to be remembered that in these early days of all-wheel drive, the electronics and, especially, the lightning fast sensors we take for granted nowadays were in their infancy. So, slip detection tended to be more of a mechanical or hydraulic reaction than an electronic signal, leading to the wide spread adoption of both the Torsen and Haldex style systems. ➤



## HALDEX

The original concept (GenI), patented by Sigvard Johansson in 1998, was based on a unique differential pump that created a hydraulic flow proportional to the difference in velocity over the coupling. Using a linear throttle valve that was activated by a stepper motor, the stiffness could be varied and the torque transfer controlled. BorgWarner acquired the Swedish based Traction Systems division of Haldex AB in 2011, an AWD coupling was the first major product launch after and the Gen V was the first major product development following that acquisition.

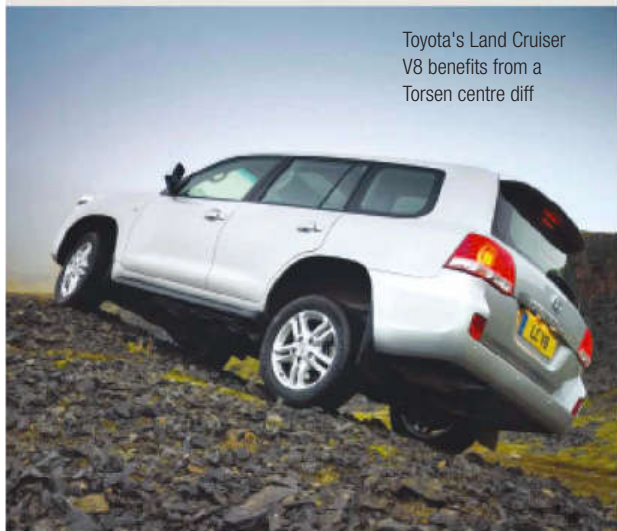
The coupling features an integrated electronic control unit with vehicle dynamics software that can be adapted to the customer's requirements for unique driving characteristics. Optimised for practically all driving conditions and only providing the requested amount of torque to the rear axle, the coupling's electronically controlled wet multi-plate clutch allows the torque distribution to be automatically varied between the front and rear axle. To accomplish this, a new lightweight and compact design for reduced vehicle complexity and easier integration into the drivetrain is used. BorgWarner's GenV AWD coupling delivers an immediate pre-emptive response with a high torque accuracy. Calculation is carried out by the integrated electronic control unit based on data provided by the on-board electronics. If required, and depending on road conditions and vehicle load distribution, full locking torque is available at any time and any speed because the GenV coupling functions independently of the differential speed between the front and the rear axle.





# UNDERSTANDING YOUR 4X4

## Transmissions



Toyota's Land Cruiser V8 benefits from a Torsen centre diff

### TORSEN

This technology can trace its roots back to a form of differential called the Dual Drive invented by American, Vernon Gleasman in 1958 and manufactured by Gleason Power systems. Subsequent owners included the Zexel Corporation and Robert Bosch who sold it in 2003 to Toyota Machine Works which morphed into the JTEKT Corporation two years later.

The operating principles behind the TORque SENSing system is elegantly simple and effective, which is why it has become so popular amongst manufacturers of 4x4s and all-wheel drives as well as other applications in front- and rear-wheel drive systems. The beauty of the Torsen differential is that it can be used to distribute torque across the front or rear axle as well as a centre differential apportioning torque fore and aft.

The Torsen system does without clutches to slip or wear out. It is an on-demand, torque-biasing system with the driven axles directly coupled through its patented Invex (T1), Equvex (T2) or planetary helical (T3) gears allowing multi-function capabilities in one integrated unit that can be combined with electronic systems such as ABS, and other electronic traction control systems.

### GKN DRIVELINE

The British engineering giant has developed a comprehensive range of all-wheel drive control systems, including hardware for both electric vehicles (EVs) and hybrids. Its current technology is suitable for both 'A' and 'C' segment cars although a higher capacity variant is under development.

GKN's Power Transfer Unit (PTU) links to the transmission's final drive. The integrated high-efficiency PX constant velocity joint offers compact packaging as well as improved

response times. The electro-mechanical dog clutch disconnects upstream of the PTU hypoid gear set to eliminate frictional losses when AWD isn't required. While GKN's Rear Drive Module (RDM) is the first application of the sideshaft disconnect configuration clutch, which in common with GKN's Twinster technology, is modulated by an electro-mechanical actuator (ETM) varying torque from side to side.

Electronic Controlled Torque Manager (ETM) is an actively controlled coupling for both on-demand and full-time AWD



Jeep Renegade has the GKN AWD system, also found in the Fiat 500X

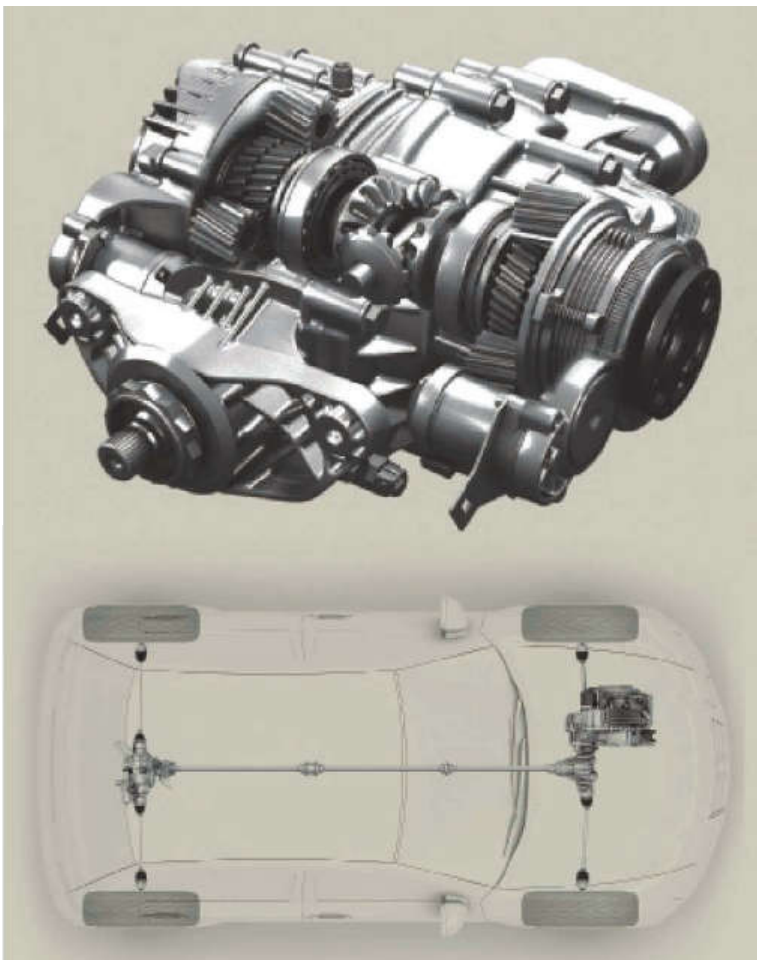
## The GKN system was designed and built for Jeep's excellent new small 4x4, the Renegade



drivelines that employ an ECU to control the clutch torque by adjusting the amount of current based on available vehicle inputs and control algorithms. This differs from the eAxle developed for split hybrid systems, which incorporate a proprietary disconnect clutch technology that facilitates on-demand AWD. The hybrid system can be combined with an electric motor up to 80kW and 200Nm and is capable of delivering that torque to the secondary axle.

Electronic Torque Vectoring (ETV) can deliver higher lateral acceleration and improved traction whilst reducing brake intervention. A two-stage planetary gear set is located between the differential and each sideshaft; the planetary carriers are controlled by an E-motor actuated wet friction brake. In straight-line driving the planet carrier, sideshaft and differential cage run at the same speed. Whereas during cornering the planetary carrier turns faster at the corner inside wheel, or slower at the outside wheel than the differential case. When the wet friction brake is actuated, the planetary carrier is slowed down, compared to the axle housing, biasing extra torque to that particular driveshaft. The clutch is actuated by a ball-step-ramp mechanism powered by an eMotor reacting rapidly, actually in less than 120m/secs.





## ZF

EConnect is a new efficient all-wheel drive system that was developed by ZF for vehicles with front-transverse drive. Through its clever automatic decoupling function, the vehicle's over-consumption resulting from all-wheel drive, can be minimised. A reduction in consumption of up to five per cent is possible in comparison with conventional all-wheel drives.

For constant straight-ahead driving, powering all four wheels presents no advantages for vehicle dynamics or for handling. But as soon as the surface or the driving mode changes, there are clear advantages to having two driven axles. All-wheel performance with simultaneously lower fuel consumption thus requires activation and deactivation of the all-wheel drive that is imperceptible to the driver and with as little fuel loss as possible, within a few hundred milliseconds.

EConnect shuts down the extra consumption resulting from the all-wheel drive design in vehicles with front-transverse installation: In the front-operating 2WD, the entire all-wheel driveline comes to a standstill – from the angle drive to the propshaft and the rear axle drive.

The automatic decoupling takes place in front directly after the main transmission and in the rear axle drives by using one clutch for the left wheel and another for the right. Thus, there are no drag losses that increase fuel consumption in the all-wheel components. The weight-optimised construction of the all-wheel drive system also has a fuel-saving effect.

At the same time, the vehicle dynamics and driving safety rise through distribution of torque to the individual wheels. Thus, through the classic hang-on idea (demand-oriented distribution of torque between front and rear axles), it is also possible to use the effect of torque vectoring: This causes the yaw moment of the vehicle to be actively influenced by individual wheel control of the rear wheels. On changing subsurface or going into curves, traction and driving stability are thus improved simultaneously.



## LOOKING TOWARDS TOMORROW

Traditional off-road 4x4s will continue with their complex systems and high- and low-range transfer boxes, but as we have seen with Land Rover's Hill Descent Control, advances in electronic sensors and software allows the engineers to bring into play a multiplicity of other systems, brakes for instance, to further enhance traction. And with the advent of hybrid electric drive, then pre-setting speed for arduous rock climbing can be made even more controllable than it currently is when you bear in mind that an electric motor delivers maximum torque from the moment it's initiated.

At the other end of the dynamic scale cars like Porsche's 911 Turbo or the Lamborghini Aventador demonstrate that prodigious power outputs can be safely harnessed through four wheels rather than just the rear pair, while enhancing the car's dynamics without corrupting the steering's purity and feedback.

And in between those extremes fall, increasingly everyday all-wheel drive systems. As the number of cross-overs burgeon so will sales of all-wheel drives, especially as the fuel penalty for hang-on systems is progressively reduced to, potentially, as little as one or three per cent according to GKN. Although some of those sales might be skewed to the snow belts of North America and Europe and the Alps, there will still be a significant proportion of sales to other drivers who see all-wheel drive as a prestige buying statement.

Furthermore, as hybrid sales increase – as they will have to if OEMs (Original Equipment Manufacturers) are to meet the onerous 2020 and 2025 emission levels, then it could be argued that the electric driven wheels could improve fuel consumption by as much as 30-40 per cent when the vehicle is in electric mode.

Whichever way you look at it, all-wheel drive, 4x4 call it what you will, is not only here to stay, but here to grow. **4x4**

**Below:** Your 4x4 might have more in common with the Lamborghini Aventador than you first imagined!





# FIND YOUR 4x4 SYSTEM WHAT DRIVES YOUR WHEELS?

### Audi

**A4 Allroad quattro/A1 quattro/A3 quattro/Saloon quattro/Cabriolet/RS3 Sportback**

**System:** Multi-plate clutch-based system.

**How it works:** A rear 'sport differential' transferring torque between the rear wheels is standard for the S6, S7 Sportback, RS 4 Avant, RS 5, RS 6 Avant, RS 7 Sportback and some A8 models (including the S8) and optional for some A4, A5, A6 and A7 Sportback models (including the S4 and S5).

**S4 Saloon/S4 Avant/RS4 Avant/A5 Coupe/A5 Sportback/A5 Cabriolet/S5 Coupe/S5 Sportback/A6 Saloon/A6 Avant/A6 Allroad quattro/S6 Avant/RS6 Avant/A7 Sportback/RS7 Sportback/S7 Sportback/A8/Q3/Q5/Q7/TT Coupe 2.0 TFSI quattro/Cabriolet 2.0 TFSI quattro/TTS Coupe/TTS Cabriolet/R8/RS/e-tron**

**How it works:** The latest electrohydraulic multi-plate clutch eliminates the pressure accumulator used in the previous generation, reducing the unit's weight by 1.5kgs. The clutch is located at the end of the propshaft, in front of the rear axle differential – an installed position that benefits the axle load distribution. When the all-wheel drive software calls for torque, the electric axial piston pump develops up to 38 bar of hydraulic pressure. When the friction plates are pressed together, the torque is transferred seamlessly to the rear axle. To ensure the rapid development of pressure, the pump continuously circulates oil during normal driving. The electronic management of the multi-plate clutch works together with torque vectoring, a function of the Electronic Stabilisation Control (ESC), and is also networked with the Audi drive select system. The controller is strongly oriented on handling parameters such as steering angle. On dry roads, up to 50 per cent of the power is transferred to the rear axle. When the front axle has very little grip, this can be as much as 100 per cent. The self-locking centre differential-based quattro system is purely mechanical and operates without any delay. In normal operation, the self-locking central differential, which is designed as a planetary gear train, transfers 60 per cent of the engine's torque to the rear axle and 40 per cent to the front. Depending on the situation, up to 70 per cent of the torque can be transferred to the front and up to 85 per cent to the rear. The further developed wheel-selective torque control is a drivetrain "partner" and is now active on all road surfaces. During dynamic cornering, the software function slightly brakes both inner wheels before wheelspin occurs. This also takes place when the driver is not pressing the accelerator. Due to the different forces, the car turns slightly into the bend; the roll-steer effect remains neutral for longer and the car's handling is more precise, agile and stable.

**Quattro sport differential:** The sport differential actively splits torque between the rear wheels through two stages. During

sportier driving, the system literally pushes the car into the bend, eliminating any tendency to understeer. This function is integrated into Audi drive select. The latest sport differential reacts faster than that of the previous model and is approximately one kilogram lighter.

**Bentley Continental GT Coupe/Cabriolet/GT3-R/Flying Spur**

**System:** Torsen differential 40:60 split.

**How it works:** Variable from 15:85 to 65:35

### BMW

**X1/ 220d xDrive**

**System:** Part time all-wheel drive

**How it works:** Based on the MINI's electromagnetic centre differential and distributes drive force at continuously variable levels between the front and rear axle. The electronic management system, integrated directly into the DSC unit, enables torque transmission to be altered within milliseconds.

**X3/X4/X5/X6/X5M/X6M/i8**

**System:** Part time all-wheel drive

**How it works:** The X3/X4/X5 and X6 etc. share the same permanent xDrive all-wheel drive system and electronically controlled multiple disk clutch inside the transfer case technology, although scaled up for the more powerful engines.

### i8

**System:** Hybrid drive

**How it works:** Giving the electric motor an additional gear ratio improves acceleration and pure electric range, benefiting both driving dynamics and CO<sub>2</sub> emissions. GKN's two-speed eAxe also enables the motor and all its associated systems to be downsized, reducing mass and further increasing efficiency.

### Bugatti

**Veyron**

**How it works:** Haldex front clutch, mechanical rear differential.

### Citroen

**DS5 Hybrid Diesel**

**System:** Combines 260bhp diesel driving the front wheels and a 40Bhp electric motor driving the rear wheels.

**How it works:** The Hybrid 4x4 models feature a choice of four modes. The driver can select the mode required using the dial on the central console: Auto, Zero Emission Vehicle (ZEV 3-4 mile range), four-wheel drive (front wheels powered by the combustion engine and rear wheels powered by the electric motor) and Sport (maximum use of the electric motor in parallel with the combustion engine).

### Dacia

**Duster**

**System:** Selectable AWD

**How it works:** 4x2; Auto and Lock modes.

### Ferrari

**FF**

**System:** Highly innovative lightweight four-wheel drive system designed and assembled in-house.

**How it works:** The front drive unit casing are a two-speed gearbox and a pair of electronically controlled multi-plate oil-bath clutches. When the car's ECU

determines that drive to the front is required, it progressively closes the clutches. The two clutches are independently controlled; one drives the left front wheel, the other the right. Thus there is no need for a front differential, and torque vectoring is achieved.

### Fiat

**500X**

**System:** AWD, AWD Disconnect and front-wheel drive variants

**How it works:** To meet the tight packaging targets of a compact SUV and small city car, GKN integrated a number of key features of the driveline system, saving space and optimising cost and efficiency. Instead of a standard power transfer unit (PTU), GKN developed a monobloc housing that fully integrates the propshaft's constant velocity joint.

### Ford

**Mondeo Saloon/Estate Hybrid**

**System:** Blue Oval's first European hybrid

**How it works:** Uses two electric motors and 1.4kWh lithium-ion battery combined with a 2.0-litre Atkinson cycle petrol engine to drive at up to 85mph in electric mode. The drivetrain delivers 184bhp with 67.3mpg and 99g/km CO<sub>2</sub>.

**Mondeo Saloon/Estate/Galaxy /S-Max/Kuga**

**System:** All-new Intelligent AWD is always functioning

**How it works:** Measuring how the car's wheels are gripping the road surface every 16 milliseconds – 20 times quicker than it takes to blink – the system can send up to 100 per cent of engine torque to the front or rear wheels, and make required adjustments in just 100 milliseconds.

### Honda

**CR-V**

**System:** Honda Real Time AWD system.

**How it works:** The AWD system uses an E-DPS system which activates a multi disk clutch to connect the pilot shaft to drive the rear wheels when traction on front wheels is lost and AWD is required. An electronically activated system provides a faster response time when a loss of traction is detected compared to hydraulically activated "dual-pump" system found in the third generation CR-V. The electronically activated system weighs 17 per cent less (reducing the weight of the total system by approximately 16.3kg), which further improves the CR-V's fuel economy.

### Hyundai

**Tucson**

**System:** Hyundai Wia Magna torque on demand

**How it works:** The front wheels receive 100% of torque during normal road driving with up to 50% sent to the rear wheels, automatically, depending on conditions. A manually-selected 'Lock Mode' splits torque 50/50 for enhanced stability at speeds up to 25mph. It also has Advanced Traction Cornering Control (ATCC) – combining 4WD variable torque distribution and ESC.

### Infiniti

**QX50/ QX70**

**System:** Intelligent AWD system

**How it works:** Designed to give

all-wheel drive traction when needed and rear-wheel-drive traction when it isn't via an electro-magnetic clutch capable of sending anything from 50 per cent to the front, to up to 100 per cent to the rear.

### Jaguar

**F-Type S AWD Coupe**

**How it works:** The AWD system features Intelligent Driveline Dynamics (IDD) gear driven system by Borg Warner. A control system designed and developed in-house to exploit the maximum benefits of AWD without compromising dynamics. IDD is networked to the powertrain, rear differential and centre coupling and Dynamic Stability Control (DSC) system to provide optimum torque distribution constantly monitoring conditions every 200m/secs.

### Jeep

**Renegade**

**System:** Employs the same basic architecture as the Fiat 500X.

**How it works:** Renegade Trailhawk model delivers best-in-class 4x4 Trail Rated capability with class-exclusive Jeep Active Drive Low, which includes 20:1 crawl ratio and Jeep Selec-Terrain system.

### Cherokee

**System:** The new Cherokee has the Jeep Active Drive I system with a single Power Transfer Unit. This enables four-wheel drive to be engaged and disengaged at any speed with no input from the driver. The system offers balanced torque distribution with brake traction control and can deliver or restrict power to individual wheels in extreme driving conditions.

**How it works:** Active-Drive II adds Hill-Descent control, a 2.92:1 'low range' gear-set for greater control and torque in off-road or extreme situations, and a neutral mode, which disconnects the rear axle to assist, for example, in flat towing.

### Grand Cherokee

**System:** Quadra-Trac II with rear axle Electronic Limited Slip Differential.

**How it works:** It features a two-speed transfer case that uses input from a variety of sensors in order to determine tyre slip at the earliest possible moment and take corrective action. When tyre slippage is detected, as much as 100 per cent of available torque is instantly routed to the axle with the most traction. Choose the Auto mode in the standard Selec-Terrain® traction control system for everyday driving or quickly dial in Sport, Snow, Sand/ Mud or Rock for specific driving conditions.

### Wrangler

**System:** The Defender's nearest and oldest rival?

**How it works:** Engineered to take on the most challenging off-road trails, Jeep Wrangler Polar is equipped with the Dana 30 front axle and powerful Dana 44 rear axle. Legendary Wrangler capability is achieved through the standard Command-Trac NV241 part-time, two-speed transfer case with a 2.72:1 low-range gear ratio.

### Kia

**Sportage/ Sorento**

**System:** Dymax all-wheel drive system

**How it works:** Dymax intelligent electronically controlled all-wheel drive system developed by Magna Powertrain for KX variants continuously monitors driving conditions and anticipates when all-wheel drive will be needed.

With Dymax, the new Sportage is always in the correct drive mode for the prevailing circumstances. Dymax normally delivers 100 per cent of engine torque to the front wheels. But the torque can be redistributed up to a maximum of 60:40 front-to-rear to enhance cornering stability or if road conditions deteriorate. For off-road driving, owners can manually select lock mode, which gives a 50:50 torque split at speeds of up to 25mph.

### Lamborghini

**Huracan**

**System:** Permanent four-wheel drive

**How it works:** The LDF transmission incorporates a connection with the propshaft that runs through the V10 crankcase to the front axle. There, an electronically controlled and hydraulically actuated multi-plate clutch handles torque distribution. Under normal driving condition, the multi-plate clutch diverts only around 30 per cent of the engine torque to the front wheels – meaning the Huracán has a strong rear-drive bias. However, should traction at the rear axle diminish, the clutch can smoothly and in a matter of seconds divert up to 50 per cent of torque to the front wheels by pushing the plate set together in a controlled manner. However, a maximum of 100 per cent of the torque can be distributed to the rear axle. At the rear axle, a mechanical differential lock integrated into the LDF transmission improves traction even further.

### Aventador

**System:** Permanent four-wheel drive with torque distribution to the front wheels varying continuously from 0 to 60 per cent of the total torque available.

**How it works:** An electronically controlled Haldex coupling distributes torque between front and rear axles. In a matter of milliseconds, this coupling adapts the torque distribution to match the dynamic situation. A self-blocking rear differential together with a front differential electronically controlled by ESP make for even more dynamic handling. The Drive Select Mode System enables the driver to choose vehicle characteristics (engine, transmission, differential, steering and dynamic control) from three settings – Strada (road), Sport and Corsa (track) – to suit individual tastes.

### Land Rover

**Defender**

**System:** Permanent four-wheel drive with six-speed transmission.

**How it works:** Dual range transfer box, front axle two-pin differential.

### Discovery Sport

**System:** 4x4 with Haldex centre coupling.

**How it works:** Improved Terrain Response controls, whilst some models benefit from GKN's Twinstar that uses twin electronically controlled clutches to vector torque across the rear axle



**Discovery Sport Discovery/Range Rover/Range Rover Sport**  
**System:** Full time 4x4  
**How it works:** Standard locking centre differential. Optional locking rear axle differential available with Air Suspension and Terrain Response.

#### Range Rover Evoque

**System:** Torque on demand to rear axle  
**How it works:** Active Driveline - 2WD or Torque on demand to rear axle using GKN Twinsteer technology.

#### Lexus NX200t

**System:** Lexus E-Four  
**How it works:** Uses an additional electric motor to drive the rear axle when needed. Grip, control and agility are enhanced by innovations including a pre-loaded front differential and yaw rate feedback control. The pre-loaded front differential, featured for the first time in a Lexus, ensures straight line stability and acceleration performance when the differential is under light loads and when there is a low speed difference between the left and right wheels when cornering. The differential uses a plate spring between the side gear and side gear washer to add pre-load, which limits torque split between the front wheels. At higher speeds it operates as an open differential.

#### RX450H

**System:** Full hybrid drive system  
**How it works:** Front drive unit is a series/parallel hybrid system featuring a 3.5-litre V6 petrol engine, powerful electric motor, generator, high performance battery, power control unit and a power split device. The rear unit provides four-wheel drive via a second electric motor. It is mechanically independent from the front unit and is activated and continuously adjusted by the Vehicle Dynamics Integrated Management (VDIM) system, working in conjunction with the PCU.

#### Mazda CX-3/CX-5

**System:** Part time four-wheel drive  
**How it works:** New generation AWD system that provides power when and where it's needed. Its intuitive front-wheel slip warning detection system utilises 27 sensor signals to monitor road conditions as well as driver intentions. Instantly determining how much grip each wheel needs, the active torque control coupling sends the right amount of torque to each wheel, even when road conditions are constantly changing.

#### Mercedes-Benz A45 AMG 4MATIC

**System:** Permanent four-wheel drive  
**How it works:** AMG Performance 4MATIC all-wheel drive system features infinitely variable torque distribution extending from front-wheel drive only to 50:50 to the front and rear axles.

#### G-CLASS

**System:** Permanent four-wheel drive 50:50  
**How it works:** Combines electronic traction system 4ETS with a transfer case and three 100 per cent differential locks. High-low-range ratios.

#### GL-/M-CLASS

**System:** Permanent four-wheel drive 4MATIC  
**How it works:** Optional ON&OFFROAD package with six specific driving programmes.

#### Mini

**Cooper D Countryman ALL4**  
**System:** All 4 all-wheel drive

**How it works:** Electromagnetic centre differential and distributes drive force at continuously variable levels between the front and rear axle. The electronic management system, integrated directly into the DSC unit, enables torque transmission to be altered within milliseconds.

#### Mitsubishi ASX ZC-H

**System:** Variable 4WD  
**How it works:** Electronic VCU on the rear axle but no centre differential. Three driving modes: 2WD, 4WD, 4WD lock.

#### Shogun

**System:** Super Select 4WD  
**How it works:** Low range option with a centre differential for 4WD and a Viscous Coupling Unit (VCU) that allows torque transfer automatically and four driving modes.

#### Outlander

**System:** Variable 4WD  
**How it works:** Electronic VCU on the rear axle but no centre differential. Three driving modes: 4WD ECO, 4WD Auto, 4WD Lock.

#### Nissan

**Juke/ Qashqai dCi 130**  
**System:** ALL-MODE 4x4-i electronic technology  
**How it works:** As well as splitting torque front to rear - up to a maximum of 50:50 - the Torque Vectoring System means it can also be shifted from side-to-side across the rear axle.

#### X-Trail

**System:** ALL-MODE 4x4-i electronic technology  
**How it works:** Controlled via a rotary switch on the centre console, it offers a choice between two-wheel drive, Auto mode or Lock offering permanent four-wheel drive.

#### GT-R

**System:** ATTESA E-TS All-Wheel Drive  
**How it works:** The GT-R's electronically controlled All-Wheel Drive system provides nearly all of the available torque to the rear wheels, and can send up to 50 per cent of torque to the front wheels.

#### Peugeot 508RXH

**System:** HYbrid4  
**How it works:** 163bhp 2.0-litre HDi Diesel engine combined with the 37bhp electric motor driving the rear wheels operate either alternately or together, in a way that is transparent for the user. With four selectable driving modes: ZEV, 4WD, Sport and Auto.

#### Porsche

**911 Carrera 4 Coupe/ Cabriolet/4S Coupe/4S Cabriolet**  
**System:** Active all-wheel drive  
**How it works:** Electronically controlled, map-controlled multi-plate clutch (PTM).

#### 911 Carrera 4 GTS Coupe/ Cabriolet/ Targa 4/4S/GTS

**System:** Active all-wheel drive  
**How it works:** Electronically controlled, map-controlled multi-plate clutch (PTM); seven-speed manual transmission with mechanically locking rear differential and Porsche Torque Vectoring (PTV); optional seven-speed dual clutch transmission (PDK) with controlled rear locking differential and PTV Plus.

#### 911 Turbo/S/Cabriolet/Cabriolet S

**System:** Active all-wheel drive  
**How it works:** Electronically controlled, map-controlled multiplate clutch (PTM); seven-speed Doppelkupplung (PDK) with controlled rear locking differential and Porsche Torque Vectoring Plus (PTV+).

#### 918 Spyder

**System:** Parallel full hybrid  
**How it works:** Combustion engine with hybrid module and transmission bolted together to form a single drive unit; seven-speed Porsche Doppel - kupplung (PDK); rear-wheel drive; front electric motor with transmission for driving the front wheels (decoupled from 165mph); five pre-selectable operating modes for optimum co-ordination of all drive units.

#### Macan

**System:** Active all-wheel drive.  
**How it works:** Electronically controlled, map-controlled multi-plate clutch.

#### Cayenne

**System:** Active hang-on all-wheel drive.  
**How it works:** Porsche Traction Management (PTM); with electronically controlled, map-controlled multi-plate clutch; permanently driven rear axle, fully variable distribution of power to the front axle.

#### Cayenne S E-Hybrid

**System:** Permanent all-wheel drive  
**How it works:** Porsche Traction Management (PTM) with limited-slip centre differential; basic torque distribution (FA/R4) 42/58.

#### Cayenne Turbo

**System:** Active hang-on all-wheel drive  
**How it works:** Porsche Traction Management (PTM) with electronically controlled, map-controlled multi-plate clutch; permanently driven rear axle, fully variable distribution of power to the front axle.

#### Cayenne Turbo S

**System:** Active hang-on all-wheel drive.  
**How it works:** PorscheTraction Management (PTM) with electronically controlled, map-controlled multi-plate clutch; permanently driven rear axle, fully variable distribution of power to the front axle; Porsche Torque Vectoring Plus (PTV+) with variable drive torque distribution at the rear axle and electronically controlled rear differential lock.

#### Panamera 4/4S/Turbo

**System:** Active all-wheel drive  
**How it works:** Electronically controlled, map-controlled multi-plate clutch (Porsche Traction Management, PTM).

#### Turbo S

**System:** Active hang-on all-wheel drive  
**How it works:** PorscheTraction Management (PTM) with electronic map-controlled multi-plate clutch; permanently driven rear axle, fully variable power distribution to front axle.

#### Renault Kadjar

**System:** ALL-MODE 4x4-I  
**How it works:** The Renault-Nissan Alliance-developed Electronic Traction Control system drives a coupler in real time to ensure that the ideal amount of torque is transmitted to the rear wheels in accordance with the vehicle's speed and level of grip, with 'Lock' and 'Auto' modes available.

#### Skoda

**Octavia Scout/ Superb SE L Executive Estate**  
**System:** Haldex 5 4x4.  
**How it works:** The all-wheel drive system responds to a control unit that continuously calculates the ideal driving torque for the rear axle. An Electronic Differential Lock (EDL) helps deliver traction in the most challenging of conditions. Operating on both front and rear axles, it acts as an inter-wheel lock.

#### Yeti

**System:** Haldex 5 4x4.  
**How it works:** Fifth-generation, electro-hydraulically controlled Haldex multi-disc clutch. Located in the same housing on the rear axle as the final drive and the rear axle differential. Electronic Control Unit monitors the car's driving behaviour to determine the correct torque levels for each axle. Electronic differential lock (EDS) on both rear axles, drive is also distributed evenly from side to side.

#### SsangYong

**Korando SE4/ELX4/ Tivoli EX/ELX**  
**System:** Torque on Demand 4x4  
**How it works:** With lock mode electronically-controlled multi plate clutches with a 90 per cent to 10 per cent torque split.

#### Rexton/Turismo EX

**System:** Torque on Demand 4x4  
**How it works:** Mechanical switchable four-wheel drive system with 50:50 split.

#### Subaru

##### Outback

**System:** Symmetrical AWD.  
**How it works:** 2.0D MT comes with viscous LSD.

#### Forester

**System:** Symmetrical AWD.  
**How it works:** 2.0D MT and 2.0i MT Symmetrical AWD with centre differential coupled to viscous.

#### XV

**System:** Symmetrical AWD.  
**How it works:** Centre differential coupled to viscous LSD. 2.0i AT comes with active torque split system.

#### Impreza

**System:** Symmetrical AWD.  
**How it works:** 1.6i MT with centre differential coupled to viscous LSD 1.6i CV with active torque split system.

#### WRX STI Type UK

**System:** Symmetrical AWD.  
**How it works:** Driver-controlled centre differential coupled to viscous LSD.

#### Suzuki

**SX4 S-CROSS ALLGRIP**  
**System:** ALLGRIP.  
**How it works:** The 4WD system has four driver-selectable modes: auto, sport, snow, and lock.

#### Swift 4x4

**System:** AWD.  
**How it works:** Fully automatic and permanent four-wheel drive system transfers additional torque to the rear wheels when required via a viscous coupling.

#### Jimny

**System:** Drive Select 4x4.  
**How it works:** Features a transfer box with high or low ratio four-wheel drive. The freewheeling front hubs are engaged automatically and four-wheel drive can be selected on the move.

#### Vitara SZ5

**System:** ALLGRIP  
**How it works:** The new Vitara's ALLGRIP system uses a feedback function to send more torque to the rear wheels if it detects wheelspin at the front. The 4WD system has four driver-selectable modes: auto, sport, snow and lock.

#### Tesla

##### Model S

**How it works:** Option on Model S 70D and Model S 85. Model S Performance comes standard with All-Wheel Drive Dual Motor. With two motors, one in the front and one in the rear, Model S digitally and independently controls torque to the front and rear wheels.

#### Toyota RAV4

**System:** Part time 4x4.  
**How it works:** Dynamic Torque Control constantly monitors and controls the transfer of drive torque between the front and rear axles using an electromagnetic coupling located ahead of the rear differential. It determines the degree of torque transfer using data from sensors monitoring vehicle speed, steering angle, throttle angle and yaw rate. The torque distribution can vary from 100:0 to 50:50, front to rear. Front-wheel drive is automatically engaged in normal driving conditions to achieve the best fuel economy.

#### Land Cruiser/V8

**System:** Permanent 4x4  
**How it works:** Uses a Torsen limited slip differential in the centre differential. The unit has a motorised transfer shift actuator for easier High-Low gear ratio shifting and the shift effort itself has been reduced by 30 per cent, giving better performance in cold weather. In normal conditions, torque is split 40:60 front to rear, but the LSD can automatically vary the ratio from 50:50 to approximately 30:70 in order to achieve the optimum distribution in any given driving scenario. An additional rear diff lock is fitted to some models. Active Traction Control and Multi-terrain Select. Crawl Control.

#### Vauxhall

**Insignia Country Tourer**  
**System:** Part time 4x4.  
**How it works:** Electronically controlled 4x4 drivetrain incorporates a clutch, operating on Haldex principles, and an electronic limited-slip differential to ensure traction on both paved and unpaved surfaces.

#### Mokka

**System:** Adaptive AWD  
**How it works:** Torsen-style differential. In normal conditions it's 100 per cent front-wheel drive, but can distribute up to 50 per cent of its torque to the rear axle, depending on the level of grip/traction.

#### Volkswagen

##### Golf/Passat Alltrack

**System:** 4MOTION.  
**How it works:** Haldex 5. Under low load or when coasting, forward drive comes primarily from the front axle, and the rear axle is decoupled. If needed the rear axle is seamlessly and instantly engaged by the Haldex coupling, activated via an electro-hydraulic oil pump.

#### Tiguan

**System:** 4MOTION.  
**How it works:** Haldex using an electrohydraulic all-wheel drive clutch. No speed differences are needed between the front and rear axles to activate the all-wheel drive clutch, since pressure is built up via an electric pump.

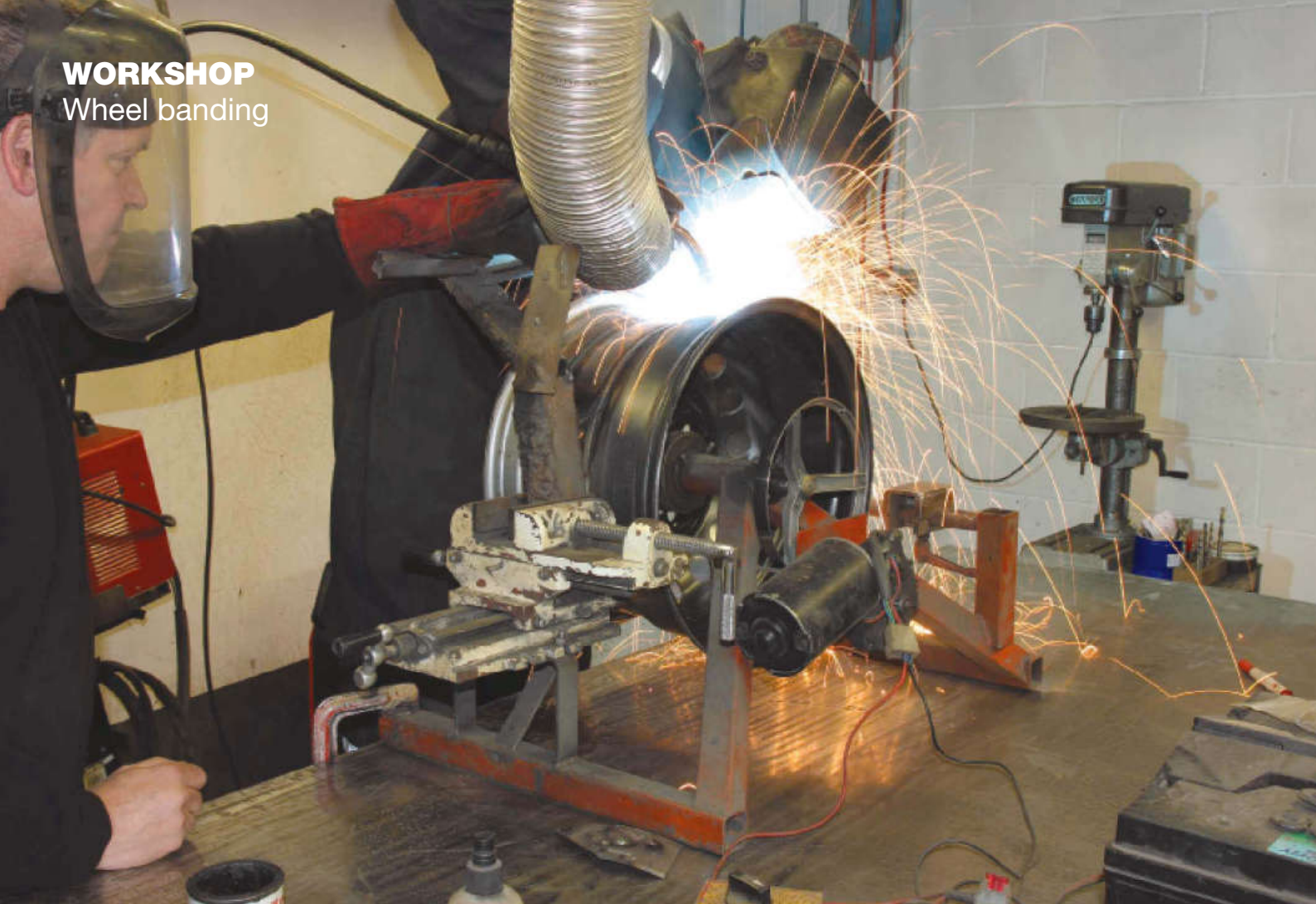
#### Touareg

**System:** 4MOTION/ 4XMOTION.  
**How it works:** 4XMOTION features a two-speed transfer gearbox, centre and rear differentials that can each be fully locked for off-road use and five stage control for the four-wheel drive system.

#### Volvo

**V40 T5 AWD Geartronic Cross Country Lux Nav/V60 D6 AWD R-Design Lux Nav/XC60/XC70 SE NAV/LUX/XC90**  
**How it works:** All Volvo all-wheel drive variants employ the latest generation Haldex 5 electro-hydraulic clutch pack.





# BAND OF STEEL

Fancy some bigger off-road rubber, but your wheels can't take it? You might not have to buy new wheels, why not consider adding some width in your wheels with a steel band insert. Alonze Custom Fabrication show what's involved

**Words and photography:** Rob Hawkins

**W**ider wheels on off-road vehicles can allow for tougher rubber and help to maximise grip. While a new set of wheels could be the answer, one other solution could be to have a set of steel wheels widened for you. Known as banding, this custom modification has long been popular with dragsters, but it's also useful for 4x4s.

However, the work involved in widening a wheel isn't something that can be done at home with a MIG welder! The quality of the weld, thickness of the band and accuracy that goes into banding the wheel all mean this is beyond the scope of most of us. But that didn't stop us finding out what's involved in banding a steel wheel, so we headed off to Scarborough in North Yorkshire to visit Alonze Custom Fabrication, who have

been banding steel wheels for five years and regularly receive wheels for many a Land Rover to widen. We went along to watch the process and can show you the following steps, using some ingenious homemade, but cleverly engineered equipment.

## Contacts:

**Alonze Custom Fabrication**

**Tel:** 07973 266955

**Website:** [www.alonzecustom.co.uk](http://www.alonzecustom.co.uk)

**Email:** [alonzecustom@hotmail.co.uk](mailto:alonzecustom@hotmail.co.uk)

Banding prices:-

Up to 15in: £50 per wheel

16in: £55 per wheel

17in: £60 per wheel





# RIM REMOVAL

1



Jim at Alonze Custom Fabrication starts the banding conversion by dot punching the point on the inside of the wheel, which is next to the hole for the tyre valve. This ensures the rim is fitted in the same position after the band

2



The wheel is secured in a jig that half resembles a wheel-balancing machine, but with an angle grinder and cutting disc attached. With their own lathe to make the centre bosses to secure the wheel's centre bore in position, Jim and his Dad, Dom have amassed quite a collection

3



As the wheel is slowly turned on the jig via a windscreen wiper motor, the angle grinder is switched on and its cutting disc slices through the first skin of the outer rim of the wheel. It won't cut all the way through the wheel

4



After cutting a line all the way round the outer rim, it can be parted from the wheel. It needs a little persuasion with a hammer, but providing the cut is sufficiently deep, the outer rim will fall off



# MAKING THE BAND

1



Armed with a large sheet of 3mm thick steel, Jim's father Dom, measures the required width of the band and cuts off a section using an electric powered guillotine. It slices through the steel like butter, making a clean cut



3



The length of flat steel is run through an industrial sized mangle to turn it into a band. This takes several attempts, gradually bending the length of flat steel into shape. The same equipment can be used to make cylinders

2



The length of flat steel needs to have bevelled edges to make it easier for welding to the wheel. A bevelling machine can do this and it's more accurate and a lot quicker than trying to do this by hand



4



The diameter of the band isn't too important at this stage, as it can be adjusted to fit around the wheel. Plus, any excess will be trimmed off later, so providing it forms a band, that's all that matters for now



## RIM AND BAND

**1**



Welding the band in position, to TIG weld it to the outer rim. Spot welds are added between the rim and band to initially position it. A straight edge is used to check

**2**



The ends of the band overlap, so the excess has to be cut off. A diagonal cut is made, to be seam welded later. The band remains tack welded to the outer rim

**3**



With the outer rim and band tack welded together, it's now time to fit the band. This will achieve the correct shape for the band and enable it to be seam welded together

**4**



The band and outer rim are positioned over the wheel and hammered into position. The outer rim and band will be separated from the wheel once seam welded together

**5**



With the wheel secured in the jig and rotating at a constant speed, the outer rim and band are seam welded together. Jim welds, Dom checks it and adjusts

**6**



After seam welding the outer rim and band together, they are removed from the wheel to allow the join in the band to be welded. This diagonal cut was made in step 2

**7**



Jim tidies up the exposed areas of the welding where the ends of the band are joined and where the rim joins the band. A neat finish is essential and needs to be air tight

**8**



The exposed area of the band is cleaned on a sanding drum using a P60-grit paper. The clean metal surface and the rest of the wheel will need to be painted

## FINAL WELDING

**1**



With the outer rim and band seam welded together, all that remains is to fit them onto the wheel, check they are correctly aligned, then weld everything together. Mallet used to fit the band over the wheel

**2**



Before the band and outer rim can be welded onto the wheel, they must be correctly aligned, so they're fitted on the jig and turned to ensure they rotate true. Measurements are taken along the outer rim and across the width of the wheel

**3**



The band and wheel are tack welded at this stage, measuring after each weld to ensure the wheel rotates true. This is difficult with wheels that are often slightly out of true to start with

**4**



Confident the band is correctly located and tack welded to the wheel, these parts are transferred to the welding jig where they are seam welded together. The wheel is rotated throughout welding

## LEAK TESTING

Once the banded wheel has been welded and allowed to cool, a tyre valve is inserted the wrong way round, then a hydraulic press is used to conduct a leak test. Using thick sheets of rubber and wood, the banded wheel is sandwiched in position and air is fed into the sealed area of the rim of the wheel. This is the opposite way round to how air will be contained by the tyre, but is sufficient to trace any leaks, especially using the same test liquids as used by gas plumbers





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## PROJECT PICK-UP

Isuzu D-Max



# Raising The Bar

Time to start the improvements and modifications as we set out to make this Isuzu D-Max stand out from the rest. First stop; JW Rigby in Cheshire for a couple of aesthetic and security-focussed upgrades

**Words and photography:** Paul Cowland

**V**ery few vehicles are so aptly named as a pick-up. As the fence-painting advert says, "It does exactly what it says on the tin." And, since I acquired my Isuzu D-Max last month, I have been doing a great deal of picking up as it happens. Everything from car parts, to potted plants and from tip-runs to kid paraphernalia. In each case the Isuzu performs brilliantly, swallowing six bikes with consummate ease – and making the trip to the garden centre to keep Mrs Cowland happy the work of a single (if expensive) trip. Having no canopy means that I can fit any item – and of any height – in the back, but having a fully open bed does create its own set of issues. Not only in terms of keeping valuables safe and secure, but also keeping the back of the truck clean, tidy and protected from the elements!

In my old beloved Rodeo, I solved this dilemma by the fitment of a

Mountain Top. I loved its hard-core chequered plate looks and tough construction. I loved its security and load-carrying ability, but its only real drawback was that, once fitted, it wasn't an easy thing to stow away should you suddenly find yourself miles from home and needing to load something that protruded above the height of the bed. What I needed this time was some kind of rolling tonneau that was a little more versatile. Able to securely lock valuables away in a second, but one that would also allow me to open up the back of the truck whenever I needed to for ad-hoc hauling tasks.

While working on a lengthy filming assignment up in Cheshire, I popped in to see the charming folk at JW Rigby in Marton, near Macclesfield. Chatting to big chief Andrew Rigby and his enthusiastic team, I became increasingly desirous of a 'Roll 'n' Lock' top, which answered all of my questions



**Above:** JW Rigby in Cheshire has a great selection of Isuzu tricks – and a hugely experienced workshop team

**Top:** First job was to remove the OEM bedliner to gain access to the bed

in one smart-looking unit. The top was fully lockable, featured a smart easy-to-clean vinyl covering over a sturdy aluminium roller and looked as if it was always meant to be there. Sounded ideal to me! Andrew also suggested that now would be a great time to fit an aesthetically pleasing 'Sports Bar' at the same time too, as doing both jobs together can save significant labour when doing them as



two separate tasks. Seeing as though this appealed strongly to my sense of 'man maths' – as well as the fact that I do want to fit auxiliary lighting at some point in the future – I shook his hand and booked the Isuzu in for a week or so later.

Like all fun things, fitting day came around in a flash, and I arrived good and early at JW Rigby to make sure I could capture all the action. Fitting my chosen parts would be ace technicians Kelvin and Jon, who mercifully were both veterans of this type of fit. Seeing the parts laid out on the workshop only served to remind me what a well-engineered and comprehensive set of kit this lot is... I was rather glad I had elected to have someone else fit it!

Prior to removing the bed-liner, the lads carefully trial-fitted the roller blind cassette reel into the Isuzu bed to mark where the load liner would need to be cut. With this done, they swiftly unbolted the liner and removed all weather stripping in order to start the fit proper! Clearly no stranger to the art, Kelvin made a surgical cut into the bed-liner to allow the cassette to fit snugly against it, before filing the edge to keep things looking neat. Impressive, seeing as this will never be on show!

With the liner back in, our fitting duo then set about marking out where the Sports Bar brackets would fit, and it was interesting to see here how the sealing strip on the roller cassette can be trimmed to fit over these brackets and get everything sitting squarely – testament to Andrew's initial advice about the convenience of fitting the two at the same time.

Then, the side rails could go in. These feature smart trims that sit neatly on top on the truck bed, but also house the channels that allow the roller blind to smoothly unfurl across the top of the bodywork. For that reason, fitting must be done with millimetric precision – a mantra to which Jon and Kelvin seemed only too happy to work,



**Top:** The kit laid out. Quality and solidity of kit was most reassuring!

**Above:** Kelvin breaks out the cutting disc with impressive accuracy



checking and adjusting carefully whilst tightening all clamps and fixings to get everything looking 'just so'. I love it when techies pay attention to small details, and I was delighted to see Kelvin carefully smoothing the rubber seals out with a trim tool to make sure that they sat perfectly. Superb stuff!

This kit even contains clever drainage tubes that allow collected water to go through, under and out of the bed-liner ➤



**Above right:** Nice to see this edge being filed... even though it will never be seen! Time taken to level brackets over sports bar brackets would pay dividends later

**Right:** Sports bar gets its first trial fit



**Left:** Great care taken over brackets and clamps to ensure a 'factory' level of fit. Top trims look smart – and also act as the runners for the bed blind





## PROJECT PICK-UP

Isuzu D-Max



itself, protecting it from careless scratches. With that lot fitted, it was time to add the final trims, before bolting up and tweaking the Sports Bar and its neat wraparound trims for the final look. Standing back to look at the finished article, it's fair to say that I was beyond delighted! Andrew had promised me that it would look like a factory fitment when it was done, and you have to agree, he wasn't wrong! That's the beauty of fitting genuine accessories, of course - somebody much higher up in the chain has already ensured that they fit and work as they should! Add in the fitting abilities of fully trained techs and it's little wonder it all looked and worked so well.

Now, all it takes is a turn of the key to switch my pick-up from a smart and

– keeping your bed contents dry. In fact, the whole kit contains several great design touches that clearly point to a well-thought out product that has actually been used by its creators.

The tailgate is then fitted with the latching strip to allow the roller blind to securely mate and lock onto the panel, and the kit even includes a strip of clear vinyl to affix to the top of the tailgate



**Top left:** Rear rail allows the bed cover to latch securely to the tailgate – and is lockable

**Top middle:** With the trim covers on, Sports bar looks solid, neat and adds aggression to the D-Max

**Above left:** Kit also includes clear vinyl for tailgate top to prevent any scratches when loading

**Above:** Final fit and fettle to ensure perfect unfurling of cover. Action is super smooth and easy

**Left:** Looks better, works better and hides valuables away under lock and key

secure 'booted' saloon into a one-tonne lugging workhorse. And, with a hectic schedule ahead that sees me alternating between chasing and moving expensive race car parts - and making runs to the builder's merchants for a forthcoming kitchen build, the Isuzu is really going to need that 'Jekyll and Hyde' split personality in spades.

Well that's it for me this month! A huge thanks to the wonderful team at JW Rigby (01260 224328) for their superb advice and excellent service and a hearty recommendation from me towards all the personnel and parts fitted this month. My truck looks better, works better and is now more versatile than ever. I reckon I had better get it back to work to pay for it all... **4x4**



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**COMPETITION**  
ULTRA4 Wales

# WELSH CORONATION

The latest round of the European ULTRA4 Championship took place at the impressive Walters Arena in Wales. As ever, it was highly competitive, and equally addictive

Words and photography: Alan Coutts







**Left:** Team ORA Rob Butler and Paul Lundstrom giving it air in the Odyssey Arena

**Top right:** Portuguese ULTRA4 car from Team Serrao uses a Toyota 4500TD with an Atlas 2 transfer case and Dana 60 axles

**Above right:** Rob Tunnah puts the pedal down in a Team ART Motorsport 6.2L LS3 engined ULTRA4 car

**U**LTRA4 racing launched at Walters Arena in Wales four years ago, giving an electrifying injection of commercial US action into the European off-road scene. Much has changed since that first King of the Valleys, and this year's course design benefited from the input of Chris Bowler of Cambrian 4x4 Farm, one of the team who delivered the superb AWDC 'Driven to the Edge' at Walters earlier in July.

Maxxis Tyres renamed King of Wales 2015 competitors are divided into different classes, depending on the stage of development of their cars, ranging from familiar Challenge competitors to US inspired state of the art ULTRA4 buggies that could compete anywhere in the world. Top cars are fully roll caged, run around 40inch tyres and have bullet proof axles with locking differentials, double or triple bypass dampers and US engines tuned to deliver up to 800bhp.

A healthy turnout of over 40 teams got monster action in keeping with ULTRA4 reputation, spread out over a 160km circuit of rock, fast tracks, trees and quarries. Sections of the course have all been given names in the same style as the best known ULTRA4 race, King of the Hammers, to highlight the series connection. Crews have to survive some tough stages that run by

day, and as a first, a new after-dinner Saturday night section. The King of Wales has added an extra race for side-by-side vehicles (SSV) called the SXS King of Wales, where teams experienced something of an ULTRA4 Europe style course on Friday morning, centred round a modified prologue circuit. When the dust literally settled, Paul and Sarah Severn had taken podium one in the Polaris RZR dominated event.

After the SSVs, the 4x4 crews got ready for Friday afternoon's 2.8km Maxxis Tyres King of Wales 2015 prologue course, presented by Giggiepin Winches for the 4400, 4500, and 4800 classes. An arena start, followed by a fast run, an area of woodland action mixed with a short climb up the prologue steps, now renamed the Dragons tail, and a sprint to the finish. After a short break, a Magnificent Seven Prologue comprised of the top seven drivers as voted for by the competitors, gave a few extra minutes of rolling thunder in the dusty conditions. The purpose of the prologue was to set the running order for the first lap of the main King of Wales race, and unsurprisingly the on-form team were Giggiepin guru Jim Marsden and top co-driver Mark Birch in a GP Defender, with the flying Frenchman Nicolas Montador in a works Team WSR



# COMPETITION

## ULTRA4 Wales



◀ ominously only eight seconds behind.

Experienced racer Philon Parpottas has years of catering expertise, and his Bar B King company put on a mouthwatering fresh barbecue dinner for the drivers and press in the evening, followed by Off-Road Armoury sponsored ULTRA4 videos in the Heritage 4x4 Insurance Hub marquee. Saturday night is fight night by moonlight with the Wilderness Lights sponsored night time section delivering a dazzling romp up the prologue rocks, but this was no easy demonstration run, as prizes were at stake. For example, top Belgian driver Axel Burmann's race ended prematurely here when he smashed his front axle on an unforgiving boulder. When the LED light bars were finally dimmed, night section loving Jim Marsden of Team Gigglespin 4x4 had set the fastest time to take the Wilderness Lights first prize. Would he

be destined for podium glory?

ULTRA4 events have at their heart rocks and speed, and at Walters, rally tracks mixed with stony off-road stream and quarry sections gave plenty of opportunity for teams to work out a plan of action. Out on the thousand acre site, there were long riverbed rock climbs on sections such as the aptly named Belly Basher that could devour half shafts and track rod ends by the dozen, with axle-twisting traverses that stretched even the best gas filled shockers. The Maxxis Bowl, a spectator friendly water filled quarry crisscrossed with climbs and drops, led teams into mud speckled runs among densely packed larches running all the way over to Valley Town, as the parking area was called for the duration. Designed for easy viewing, the Odyssey Arena had been toughened up with suspension jarring whoop-de-doo corrugations, a



heartbreaking rock pile followed by elephants feet water holes, tight chicanes, two good jumps and a purpose built three layer rock climb. The top teams cleared it without winching, due to a combination of fine driving skills, the best technology, and sometimes a little luck.

There were several top teams from France, Belgium, Portugal, Malta and the UK who could have upset the apple cart in the main event, as the leading places chopped and changed several times over the two days. Gigglespin's Jim Marsden took the prologue, the Wilderness Lights night stage, and the €1000 King Off-Road Race Shocks prize for the fastest lap award, but transmission problems again impacted the ultimate race result of Europe's leading Challenge and Adventure Trophy driver. Off-road race car



**Top:** Rockpile jam as traffic tackles a boulder section

**Above right:** Richard Avis living the RZR1000 dream at Walters Arena

**Left:** Team Serrao uses Toyota 4.5-litre TD power to take them safely through a waterhole in the Maxxis Bowl



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# COMPETITION

## ULTRA4 Wales



◀ designer Rob Butler took the lead for a while in one of his own very fast cars, but a sheared rear pinion let the very consistent Team WSR regain the lead. Former King of the Valleys Champion, American Levi Shirley, had a torrid time this year including a roof opening like a bean can and his Off-Road Armoury built, Spider 9 axled, mid-engined Eurofighter getting upended in a massive 'racing moment'. In the Modified class, local hero Ryan Dunn and his dad Paul took the honours plus a very useful Prolinx/Cambrian 4x4 Farm shock tuning prize, while the Legends Class and 'Fastest Diesel of the Weekend' went to Marcus and Lewis Williams. All the teams in Legends were impressive, but I have to mention sixth placed Wez and dad Steve Beyon and their enthusiastic posse, whose race was enlivened by practical advice from ULTRA4 team Drainsafe. Be moved to give Team Benyon some sponsorship, it would

help them to live long and prosper. They got here thanks to the generosity of over 18 friends and family, all chipping together to make the dream possible, and being able to upgrade some of the components on their race machine would certainly help.

Feisty Frenchman Nicolas Montador from team WSR France powered his immaculately prepared works WSR Rover V8 powered buggy to a stunning first overall. Nicolas said: "It has been a great weekend's racing. The WSR is very reliable and caused no problems over the distance, allowing us to concentrate on race strategy rather than firefighting breakdowns. We were lucky, as the King of Wales was very tough on machinery this year, with only three cars from 42 finishing all the rounds. I really enjoyed the more technical sections, and loved the sporting challenge from the other teams who pressured us all the way to the finish. I am lucky to be supported by a

**Above:** Pilot Gerry Hunt and Navigator James Trembath at speed near the Maxxis Bowl quarry

**Left:** Pete Whitman wrestles his LS engined D&G buggy over the rock section called Belly Basher

**Below:** Nicolas Montador (l) Olivier Varet (r) Team WSR stand proudly beside their Rover V8 engined race winning French works car

great co-driver Olivier Varet who is always there for me, and thinking about it, the whole ULTRA4 Europe series is awesome." Portuguese powerhouse Filipe Guimaraes and Geraldo Sampaio claimed a fighting second place in their Team Big Rocks LS3 powered ORA car, putting them in a strong position going into the next round in Portugal. Unpredictable, unmissable, unforgettable, that's ULTRA4 racing. **4x4**

*The ULTRA4 crew would like to thank the generous sponsors who supported the Maxxis Tyres King of Wales Event: Heritage 4x4 Insurance, Off-road Armoury, Gigglespin Winch.com, Odyssey Battery, Wooldridge Demolition, Goodwinch and West Coast Off-Road.*



## Want to know more?

Check out the ULTRA4 Europe website at [www.ultra4europe.com](http://www.ultra4europe.com) for details on the race series, how to enter, what's on, rules and regulations, or catch them on FB.



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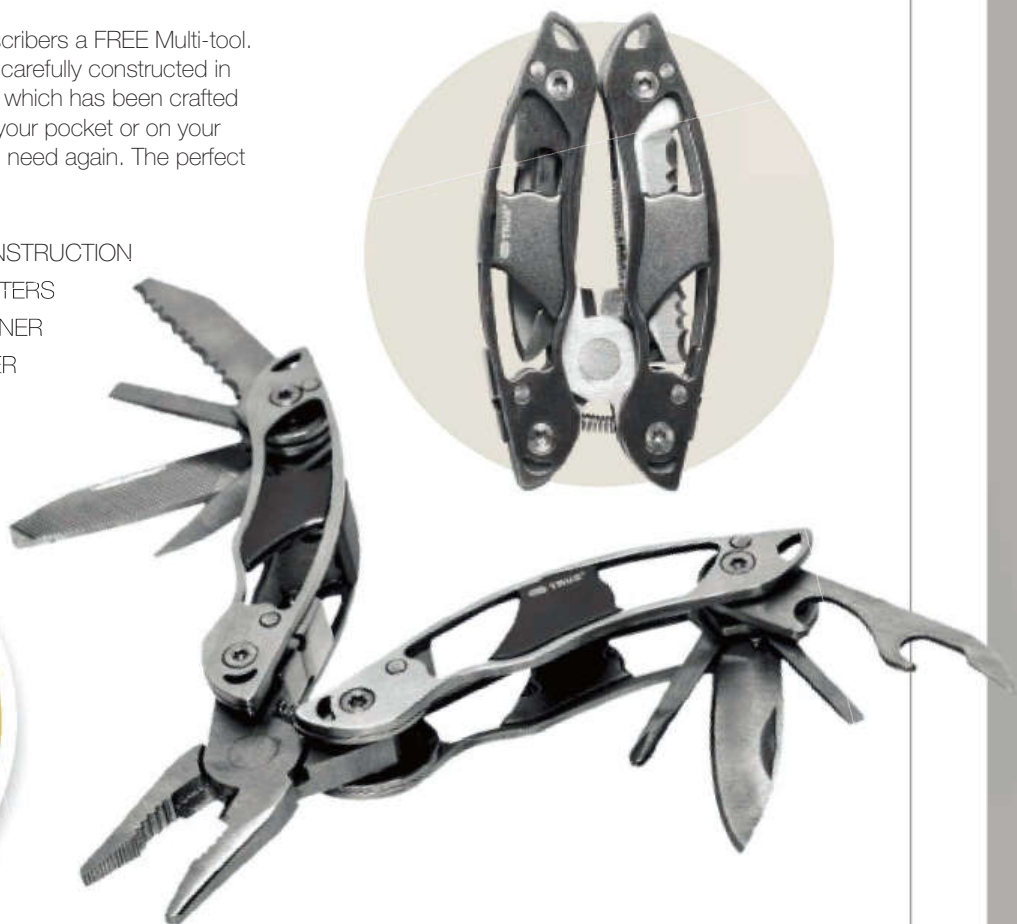
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# MARATHON MIEN

The Breslau Rallye is one of the major off-road endurance events on the calendar. And this year it was dominated by a Brit team and an Aussie co-driver. Bet they didn't discuss the cricket on their way to victory...

**Words:** Alan Coutts **Photography:** Neils Hatzmann Breslau Press Office, Paolo Baraldi, Yana Stancheva, Anton Anestiev, Sandra Biegung, and Dutch Rally Press







**Left:** Tatra trucks are formidable off-road competitors when crewed by Team Suptitz

**Below:** Suzuki Jimny pushing hard over a sandy course

**Right:** Veteran Italian Team Mutti balance their Unimog on its nose before completing the section in Germany

**T**he Breslau Rallye is one of these bucket list events along with the Dakar or the Ladoga that everyone dreams of doing, but only a lucky few achieve it. As Europe's largest adventure rally, the Breslau has a distinguished pedigree stretching back to the exuberant days when it first ran from Munich in 1995, with 35 cars, 20 motorcycles and five trucks at the start line. In 1999, Berlin was the starting point, then Dresden the 'Florence on the Elbe', and eventually Breslau (Wrocław) itself.

The hill start in Wrocław city centre that year, was spectacular, and Team Gigglespin were there to immerse themselves in the Breslau adventure. I remember them changing a hub at the side of a cobbled street on the first day's racing. Much has changed in European motorsport since then, but the Breslau Poland Adventure Rallye is still the only international marathon rally with eight stages in two European countries, and two full fat racing classes – Cross Country and Extreme. Since 2013, the event continues to evolve under Alexander Kovatchev, the Race Director and Rallye Breslau group organiser.

This year's Breslau Poland has 15 nationalities involved, with competitors coming from as far away as Israel to compete. The Breslau's fearsome reputation still thrills competitors from many countries, and not just in 4x4s. There are bikes, quads, side-by-sides, light and heavy lorries all taking part, though nowadays the slick organisation insists on the bikes starting separately for health and safety reasons.

What can competitors expect to find? The cars, quads, side-by-sides and trucks are divided into two groups, the bikes having voted to have just one this year. The Extreme class is familiar to Challenge competitors, with regular winning opportunities over long water-filled marshlands, deep river crossings to mud holes and forests. In

the Cross Country category, fast sections with no winching are the rule, but their race is big on speed, sand, navigation, dunes and whoop-de-dooos – like a supersized eight-day comp safari or hill rally. No matter the category, all roads lead finally to the Polish military zones, the various sandy tank ranges where generations of soldiers hone their fighting skills.

When results matter and there are deeds of daring to be done, there you will find the pride of Kent, Jim Marsden from team Gigglespin4x4. Jim came, he saw, he tackled but did not conquer this Everest of off-road rallies in previous years, as mechanical gremlins savaged his prospects of outright victory. At this level of extreme competition there is always someone else within striking distance of the podium, and a lead of many minutes, even hours, can soon evaporate in a mist of despair, penalties, and DNFs. The French competitors, for example, are determined foes, always well prepared and ready to put the hard work in to get a result. Indeed, they took seven out of the top 10 places in the Extreme class this year. Fresh from the superb Team Acerni organised ULTRA4 King of Italy, Gigglespin were race prepared to give it their best shot. Would it be fourth time lucky? Making the trek half way across the world, ➤





# COMPETITION

## Breslau Rallye



**Top:** Team Gigglespin shows how it's done London style as they devour the circuit in the coal mine



**Above left:** Team Ostaszewski from Poland tackle a difficult gully on their way to 1st in the extreme truck class in a Mercedes Zetros

**Left:** The Meurets drove their Team Mecacool France Land Rover Defender to a brilliant Breslau result in the extreme class to take 3rd overall

amiable Aussie Wayne Smith was selected as co-driver for this year's event. A vastly experienced competitor, Wayne had tasted victory already at the Croatia, so his return to the Breslau was a huge bonus.

The great German plain is home to huge reserves of lignite (brown coal) stretching from Germany through Poland, and one of the largest mines that extracts it is at Profen near Leipzig. The site is an awesome choice for off-roading, and is home to a well-attended round of the German Off Road Masters series. The mine is surrounded by a constant fine mist of spray to keep the dust down on the boundaries, but the heart of the pit itself is a dust laden inferno for those without masks, air con or a full set of glass. The topography is moon-like, with mounds of worked-out waste mixed with live access routes. As the giant excavators rip down through layers of time, everything from brown coal to layers of pure white and gold sand appear in the quarry depths, where ducks and moorhen nest in reed fringed ponds at the lowest level, reflecting modern mining reclamation that aims to minimise the environmental impact. On the start line, 123 vehicles faced five rounds of 15kms each, where the Extreme class revelled in the fierce spoil wash gullies, water eroded hillsides, waste dunes and high speed slippery tracks that produced some great racing. Billowing dust clouds that blotted out the car in front on day one gave way to slippery conditions after

rain, with moments of drama, such as seasoned Italian team Mutti popping their Unimog onto its nose down a banking. In the Extreme class, Team Gigglespin put down an early marker with the top time on the prologue and stage one. Encouraged by a sizzling set of results in winning events that really matter such as the French Xtrem Ironman Challenge in the Alps, then the Croatia Trophy, the Brit team was clearly on a roll.

On Monday morning, competitors drove to a legendary Breslau stage at Seftenberg. The area has changed with landscape planting in the 10 years since the Breslau was last there, but its still technical and fast, particularly for the Cross Country class. As the cars began their first circuit with the Extreme class looking forward to some mud and soft ground, the bikes were already heading for the next camp at Biedrusko near Poznan in Poland to get ready for the Lazer Lights Night Challenge later in the evening, for 72kms of night time navigation action on the forested military ranges.

Life got even tougher in the Extreme category, with swamps and mud adding to the terrors of the night, but it highlighted the adventurous nature of the Breslau – and the quality of British-made Lazer Lights for those fortunate enough to have them.

After the Polish army left the Drawsko military training area, the Rally could then move Northwest to the sandy forests of Borne Sulnowo



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# COMPETITION

## Breslau Rallye



**Top:** Team Mecacool France Land Rover Defender puts in a muddy charge to secure third overall in the extreme car class

**Above left:** Jean Marc Meuniers Polaris scrambler 1000 quad is equipped with extra Lazer Lights for added effect on the night sections

**Below:** Team Giggglepin show much happiness at winning the Extreme car class, with Breslau organiser Alexander Kovatchev (centre)

of almost every type of terrain that eastern Europe can provide in a loop that includes Drawsko Pomorskie, Borne Sulinowo, Kalisz, and back to the vast military ranges of Drawsko.

After some 1652kms for the Extreme and over 2000kms for the Cross Country, it's game over; the party and prize-giving starts, the heroes have their moment, and everyone celebrates until the wee small hours. Jim Marsden and Wayne Smith, in Team Giggglepin's GM-engined, Odyssey supported, Spidertrax-axled, Maxxis shod Defender owned their class from start to finish, winning every special stage except the first night run. The dynamic duo cantered home in a competition crushing time of four and a half hours over feisty second placed French team Toyota Evolution, Daniel Boiteux and Yves Maures, but as is Marsden's style, they kept pushing all the way to the finish line.

In the Cross Country class, the fight

was very close between all the crews; in the end only three were in contention for the podium, and the German crew (father and son) Franck and Stephan Stensky, after eight previous attempts, took the win from the Israelis.

An elated Jim Marsden told *4x4 Magazine*: "It's our fourth time here, and it's such an incredibly long and tough race. It's such an achievement, as this race was my Nemesis. We rebuilt the car with Breslau in mind, and were bitterly disappointed when the engine blew last year. We won seven of the eight stages including the KPK Memorial Stage and the Klaus Leihener Cup. We can drive a great car, people know that, get some great results when all goes well, people know that too, and have some brilliant sponsors, but it would not have been possible without the three fantastic service crew with us here, and all the team who helped prepare the car back home. It has been truly an unforgettable experience." **4x4**

◀ and the open areas of Drawsko Pomorskie, where the end game is played out. Borne Sulinowo is an eerie setting with a backdrop of huge blocks of ruined storehouses and deserted sheds, a 'Terminator' world of multi floored ruins that once held supplies for the German army.

There is, however, one stage above all that defines the Breslau, and it's called, for good reason, the Hannibal. No alps to cross, but 450 gruelling kms



## Where do I find out more?

The event website [www.rally-breslau.com](http://www.rally-breslau.com) has information on the various Breslau rallies with social media links, full results, future events, and how to enter for next year. There's also another event from the same stable, the Balkan Off-road Rally in stunning locations across Bulgaria in September.

## SHOW ME THE WAY

Using the ferry to Calais, take the A2 and it's 765 miles to Borne Sulinowo – around 12 hours travel, more if you have a trailer on tow or take a comfort break. Take the A16 through Belgium, E40, E17, E34, Holland, A67, Germany, A40, A3 E34, A2, A10, A11 Enter Poland, E28, Route 142, and Route 20 to Borne Sulinowo.



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# Our 4x4s

Monthly reports on the exploits of our personal fleet of 4x4s

## SUZUKI VITARA Nigel Fryatt, Editor

**Spec:** 1.6 ALLGRIP SZ5  
**Mileage:** 3048  
**MPG:** Not known yet!  
**Recent costs:** None  
**Arrived:** August 2015



## JEEP CHEROKEE Bob Cooke

**Spec:** 4.0 Limited  
**Mileage:** 70,830  
**MPG:** 19.6  
**Recent costs:** Nil  
**Arrived:** July 2011



## TOYOTA RAV4 XT-R Sue Loy

**Spec:** 2-litre  
**Mileage:** 60,769  
**MPG:** 34  
**Recent costs:** None  
**Arrived:** June 2012



## SUZUKI GRAND VITARA Louise Limb

**Spec:** 3dr 2.0 TD  
**Mileage:** 94,410  
**MPG:** 40  
**Recent costs:** Just on-going fuel and tyre repairs  
**Arrived:** October 2008



## JEEP GRAND CHEROKEE Hils Everitt, Editor at Large

**Spec:** Overland WK 3.0-litre  
**Mileage:** 57,153  
**MPG:** 30ish  
**Recent costs:** None, but about to change it seems...  
**Arrived:** February 2014



## NISSAN PATHFINDER SE 2.5 Paul Walton

**Spec:** SE 2.5  
**Mileage:** 78,513  
**MPG:** 22 when towing  
**Recent costs:** £28  
**Arrived:** April 2015



# FINE AND DANDY

## SsangYong Rexton W ELX

Nigel Fryatt

One of the on-going themes of this magazine, indeed a recurring theme of conversations between the majority of off-road enthusiasts, is that things are getting soft. All these new soft-roaders in the SUV market are not for real men; well, welcome to one that proudly ignores current trends.

SsangYong's Rexton is as traditional as you can get – and all the better for it. With its separate chassis and body structure, this big off-roader has selectable 4x4, with Low range. It's also a big machine, with lots of space inside and the ability to pull 3000kg (without much fuss). Perhaps a little surprisingly, it 'only' has a 2-litre Euro 5 diesel engine, with a modest power output of only 153bhp, but again it's something of an old fashioned unit and what it lacks in top end power it has down where it matters and thumps out 360Nm of torque through (in our test vehicle) a five-speed Mercedes-Benz T-Tronic automatic gearbox.

After spending some time with the latest ELX spec version,

resplendent in 'Dandy Blue' no less, we can confidently confirm that there's little wrong with a touch of heritage. Forget all the high tech materials, and space-age computer technology, and a vehicle that makes all the decisions for you. In the old adage that if it ain't broke, you don't need to fix it, then when it comes to the Rexton, in my view, it don't need fixing.

A thoroughly enjoyable time with our Dandy Rexton led me to start to think of it as a sort of budget Toyota Land Cruiser. OK, it is not as capable off-road, and the latest Land Cruiser is a remarkably luxurious beast (a new version will be with us in time for this year's 4x4 Of The Year hopefully) but you pay for all that, and our Rexton is an amazing £27,995 On The Road. The standard equipment belies that price, but for us the most important part is that we are driving a capable off-roader that still retains selectable Low range. Yes, it's a big ol' bus, which would mean some greenlanes would probably leave their marks on the Dandy paintwork, but





you'd plough through some pretty difficult conditions with ease. Tough winters would be of little worry, that's for sure. In fact, the Rexton gave the impression of being pretty tough all round. It comes with a five year, limitless mileage warranty to emphasise that point.

While I must admit that the 'cream' interior was not really to my taste, and it felt as if it was trying too hard to show this is a quality machine, praise has to go to the revised steering wheel (the old design was awful let's be honest). It was a comfortable drive, a good ride and had performance aplenty on a motorway jaunt we took during our test drive.

The Kenwood satnav/stereo system does still appear a little 'add on' but let's not forget the price here and at least it did have DAB digital radio. Gearchanges



are not as smooth as the latest multispeed boxes from some other competitors, but at the risk of repeating myself, look at the price.

So, why do you not see more of these on the road? You can't help feeling that perhaps people don't really know much about SsangYongs. It's an unusual brand name for most Brits, and if you are not living close to a SsangYong dealer, it's probably not something you would ever consider. But if you are in the market for a big, load carrying, towing capable 4x4 – and one that is still a 'proper' off-roader – then it would be worth searching a dealer and taking a test drive.

Sadly, you wonder how long it will be available. Even SsangYong is going soft, in search of global sales, with the new small SUV the Tivoli becoming available in the UK early next year. We've not driven it, but initial images show the Tivoli to be a stylish small 'soft-roader'. Here's hoping that if that raises the SsangYong brand and gets it in front of more people, perhaps that will help Rexton get the credit it deserves.

And if you think Tivoli is quite a good new name for an SUV, so did we, until we realised that it was created from I-LOV-IT, which is TIVOLI backwards. Yep, we thought that as well... **NF**



## FRESH FACED FLEET STAR

Latest member of *4x4 Magazine's* Long Term test fleet is the new Suzuki Vitara, which has just arrived as we closed this issue for press. We are looking forward to our time with this bright new thing. We are also pleased that for once we are testing a petrol-engined version rather than the obligatory diesel SUV. Our Vitara is the 1.6-litre ALLGRIP SZ5 and very early impressions are that the colour is superb, and good quality paintwork at that and it's got a lightness of touch when driving that is very much a Suzuki characteristic. It's certainly sprightly, with a touch under 120bhp on tap, which occurs at some 6000rpm, another Suzuki characteristic. All in all, getting behind the wheel makes this ol' boy feel young. Of course, whether that's a good thing we will have to see! **NF**





# LAST CHANCE

**Jeep Cherokee**  
Bob Cooke

**B**oxgrove is no more. This huge shallow quarry on the A27 between Fontwell and Tangmere, which many have described as the ultimate off-road driving site for its broad range of terrain from open desert-like clearings to thick jungle-like forest, has been closed to off-roaders because it's being turned into a land-fill site. Its popularity stemmed largely from the range of tracks and trails available, from white routes suitable for unmodified cars to obstacles demanding enough to test the most heavily modified dedicated off-road vehicles, and that was reflected in the unusually large turnout for the last day's event.

One of the newest cars at the site on that day was Ian Howcroft's Freelander 2, but it wasn't there to be trashed

off-road. I'd half-jokingly suggested to Ian that I could show him what his 4x4 was capable of if he brought it to Boxgrove, and was quite surprised when he accepted the invitation. Being very aware of the unintentional damage that could be caused to a new car on an off-road outing - even if only scratching to the paintwork from overhanging shrubbery - I quickly modified the invitation to one that involved letting Ian see what the Jeep could do.

I'm always a bit nervous about letting first-timers drive my Jeep, partly because not everyone has the mechanical sympathy to treat the old truck with the respect its age requires, and partly because it's always difficult to tell how people might react in a panic situation, and let's face it, for a first-timer off-road panic can set in well before it needs to as



**Top and above:** Straddling ruts - on a steep climb ... and in the jungle

something like a little slide in the mud or a 40 degree heel-over or the runaway feeling of a stupidly steep descent can set off a major adrenalin rush.

Ian, however, proved to be a natural - once I'd pointed out how my ancient Jeep had several key advantages over his new bells-and-whistles Land Rover in having a whole range of drive options - rear wheel drive, part

time four-wheel drive, permanent four-wheel drive and, on top of all that, low range gearing. Some things just don't improve with age.

I kept it gentle at first, picking a few fairly straightforward obstacles that couldn't possibly be scary, and once I saw how relaxed Ian was behind the wheel I aimed him at some more difficult stuff.



There's a big mound of earth near the burger van at Boxgrove, and repeated attacks on it by heavyweight dumper-tired off-roaders had turned it into a demanding playground all on its own. We watched in awe as Jonathan Beagley nose-dived his buggy down one descent and scrambled up a near-vertical hump nearby; several other drivers attempted some of the other climbs, but because of the serious rutting few were successful. "We'll go up there next," I told Ian, and he replied: "You must be joking." I pointed out that the best way to handle ruts if you're in a less capable car is to try to straddle them, which, since it was a dry and sunny day and the ground was firm, would be quite easy if he aimed it carefully enough. I wasn't sure, as I watched Ian drive up the steep slope with almost surprising ease, whether the look on his face was one of tense concentration or just his usual implacable expression. I think it was concentration,

because I saw it again a bit later, when we'd moved into the 'jungle' section and watched three Land Rovers in a row come barrelling down a steep decline with an awkward muddy hole at the bottom that threatened to throw them over as they lurched into it.

"I'd like you to try driving up that," I said. This time, when he said I must be joking, he really meant it.

I'd figured that if he could aim the Cherokee carefully enough at the start to straddle the muddy hole and then booted it as the car's nose lurched up the slope he might just do it, and what a feeling of achievement would have followed that!

Of course it didn't work. What happened was a good adrenalin-jerker, though, as Ian charged the Cherokee round and up the slope the offside right wheel squelched into the muddy hole leaving the car perched at a wacky angle with an alarming hissing noise from underneath. Just for a moment I



Showing off - well cross-axed over a hump

thought I caught a momentary nervous look on Ian's face. It was a freaky unexpected noise, but I told Ian: "Just back it out." He did so, and the hissing stopped. It had simply been the exhaust outlet, planted in the mud, forcing the gas out sideways.

Ian had brought Honda CR-V owner John Phillips along, also keen to see what the real 4x4 excitement was all about. I let him take over the wheel and was at first a little nervous as John seemed a little more gung-ho, and a bit heavier on the accelerator. He explained: "I've been on a Land Rover Experience outing, seeing what the new Range Rover can do." I explained that wasn't the best way to learn off-road techniques, because those new Land Rovers with their electronic driving aids make it all seem so easy. John retaliated by using a little too much accelerator on some steep climbs, so much

so that the Cherokee lifted its front wheel on the exit. "The idea of four wheel drive," I explained, "is to try to keep all four wheels on the ground." John backed off a little after that, but I did feel a bit of a hypocrite thinking back on how often I've had four-wheel drives totally airborne. Sensing a kindred spirit, I clammed up and let John enjoy the drive.

I've had a lot of fun at the Boxgrove site over the years, and it was quite an emotional experience driving its tracks and obstacles for the last time. There is some consolation, though, in knowing that site operator John Morgan will be opening the nearby Slindon site, a similar quarry playground with its own selection of interesting and demanding tracks and obstacles, on the second and fourth Sunday of each month to make up for the loss of Boxgrove. Check [4x4driving.co.uk](http://4x4driving.co.uk) for details. **BC**



Simon Saines gets wedged in a gully



Jay Wilson's Land Rover makes light work of Boxgrove mud



A last play on Boxgrove's tortuous terrain. At least we still have Slindon...





The Nissan was used for day trips, such as to Mont Saint-Michel (seen in the distance)

# THE TRAIL RUN

**Nissan Pathfinder**

Paul Walton

**S**imilar to Apollo 10 that in May 1969 got within eight miles of the lunar surface, our recent caravan trip to Brittany was a dress rehearsal for something much more ambitious, a trip to the French/Spanish border in 2016. With the Nissan Pathfinder 2.5 SE still a reasonably new car to me, I felt it was useful to see how it would perform pulling the caravan on the continent. Just as with Apollo 10, the trip would highlight any potential issues before the 900-mile slog to the Mediterranean coast next year.

One of these was not having the correct set of spare bulbs as per French legislation and so a new one had to be bought prior to our departure. A fresh magnetic GB sticker and new beam adapters for the headlights were also purchased, the total amount for all of these being £28.

The Nissan's boot was the perfect size for everything I needed to stow in there, mainly our newly acquired his-and-hers folding bicycles, a gas BBQ and the camping furniture. The caravan was then loaded full to the brim, including my two sons' bikes. It's not easy to get in and out of the van when they're inside, so I'm hoping to buy a roof rack before next year's trip.

By taking the Brittany Ferries' Portsmouth to Caen crossing, we were just 90 miles from our campsite at Dol de Bretagne after landing in France. Admittedly it was much closer than the 238,855 miles the moon is from the Earth, but with the car's fuel economy dropping to a paltry 22mpg from its normal 30 it seemed just as expensive to get there. On the empty French motorways the big Nissan sat happily at 60mph, barely



The Nissan and caravan in the queue to board the Brittany Ferries vessel in the distance

registering the load it was carrying or the caravan it was towing. The steep hills didn't seem to bother it either; the five-speed automatic 'box simply changed down a gear when extra torque was required. I'd then knock the gear lever into manual mode and leave it in third gear to aid engine braking during the long descents.

Once at our destination the Pathfinder was the perfect way to see the sights, including Mont Saint-Michel, Rennes and St Malo. Due to the car's size the underground car park at the latter was a tight squeeze and we all

involuntary ducked when we went under the 1.9-metre sign (we need not have worried though since even with the roof rails the car is 1783mm).

Other than the noise of the 2.5-litre diesel engine at speed, the Pathfinder is as well suited for caravanning on the continent as I hoped it would be when I bought the car back in April. So, just as Apollo 10 showed what was possible when trying to reach the moon, so has this trip for our future adventures. **PW**

Thanks to: Brittany Ferries ([www.brittany-ferries.co.uk](http://www.brittany-ferries.co.uk))



Paul refuels the Nissan in France. The car's economy dropped from 30 to 22mpg when towing the caravan



Car and caravan on the campsite pitch at Dol de Bretagne. This is why we own a 4x4 that can tow!



The big boot was large enough for two folding bikes, gas BBQ, the camping furniture and passengers



# GETTING OLD...

**Suzuki Grand Vitara 3dr 2.0 TD**  
Louise Limb

**W**ith its second cam belt replacement looming over the horizon and the Grand Vitara marching confidently through its 90,000 mile barrier, I was just beginning to marvel at things like the exhaust system and clutch components, which in my previous Suzukis were long binned and replaced by this point. I should of course have demonstrated a bit less naïve optimism as both of the above are now telling me they are tired.

I'd been listening intently to a range of geriatric car squeaks and rumbles for a while and after my resident mechanic, Jeep Phil had anchored the flapping silencer with a couple of immense jubilee clips, declaring the rear

rumble now sorted, these were joined by a strange buzzing noise every time I changed gear. Phil explained that the silencer had swapped walloping the chassis side rail with vibrating against it. Nevertheless, it seems to be getting worse and moving forward under the car, and I've either got a hornet's nest under there or, judging by the estimated position of the new, louder chorus of raspberry blowing, I fear an exhaust manifold leak.

Some time ago the throttle cable required a spot of tweaking as acceleration was both sluggish and the usual eager, mountain goat scramble, up every steep hill in third gear was now a weary second gear job. The 'tweak' has lasted a couple of years and now

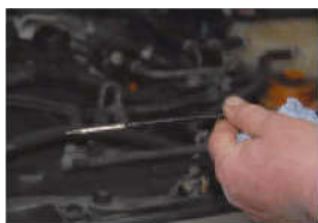


the symptoms are back, along with odd power surges which leads me to suspect the cable again, though that manifold and a failing, occasionally smelly, clutch may be implicated. Another trip to Phil is on the cards especially as I can now perform miracles like accidentally setting off in third gear and not stalling... And I

reckon that smell is worse than being stuck behind a muck spreader on a hot August day.

Interior decor is deteriorating steadily and I think I'll have to take a needle and thread to my driver's seat. These are things I simply put up with, like the intermittent self-locking, the slow driver's window motor and the odd fault on the air conditioning which means it flashes at me constantly to remind me it's not working, but such things do not get in the way of driving. Brakes and oil are more important and as Phil pointed out the other week, the front discs have more grooves than the entire Beatles White Album numbered LP run (I had to admit I suspected as much, as the car judders like an old spin drier every time I touch the brakes). Phil also found room for at least a litre of engine oil on his 'check it don't wreck it' under bonnet peek. I'm happy for him to judge oil requirements as you must never over fill a diesel engine.

Despite the steering that's still stiff and squeaks loudly on tight manoeuvres along with the creeping rust and the corroding wheels, the Grand Vitara still bats along quite well for an older lass. As long as I keep her well maintained and closely monitored there's a chance she'll be good for a long while yet, which is just as well, because even if I could afford to replace the Grand I wouldn't want to, as the newer Suzukis simply aren't of the same build quality and that 'proper' ladder chassis is somehow reassuring. I'll be hankering after something with leaf springs next though, then I'd have some real noises to worry about and not just the extra terrifying buzzing the other day, that turned out to be a bumble bee to which I'd given a free ride! **LL**





# TUNE IN, DROP OUT

Jeep Grand Cherokee

Hils Everitt

**T**he recent revelations from the USA about hacking a Jeep Cherokee's UConnect system – see my column last month – have made me think about my own UConnect system and whether it is possible that it could be hacked into one day, too. Highly unlikely, of course, I mean it would be extremely bizarre to think that some undesirable person wanted to get into my computer system and mess around with it. But it is a scary thought generally, nonetheless, that is has proved possible to do and that manufacturers are now having to look into computer security on vehicles.

Talking of the UConnect system, which is generally great and I love the voice recognition for my phone, I am getting a bit frustrated with the ICE entertainment, as I would love to go digital on my 2009 Grand Cherokee Overland. At the stage in life where Radio 1 is now getting on my nerves as it is obviously geared towards the under 25s who say 'like' every other word and love daft phone pranks (grumpy woman alert), I have turned elsewhere for my radio entertainment while driving.

Radio 2 can suffice at times, with some great shows at the weekend, but during the week mornings it's unbearable with irritating phone-ins and Daily Mail-type opinions, and some of the music is just plain awful – sorry folks but I hate Abba and cheesy '70s/'80s music in general! When driving somewhere in my Grand I want to listen to some good music and intelligent chat. I have turned towards the digital channels, mainly BBC6 Music when at home – it plays the latest 'good' chart stuff as well as great music from the archives. But on the road I can't get that in my Grand, which I find most annoying. I end up sticking to Radio 4, which isn't always what I want to hear. Good tunes for driving are essential and I don't necessarily want to listen to a CD as I like the chat and news that the radio affords. Plus digital radio now offers you so many options. The only problem with DAB Radio is that coverage can be very patchy in certain areas. I am often driving in remote areas – the Lake District is a particular bugbear – where you lose analogue signals very easily. We often listen to Test Match Special (TMS) which is on Radio 4 LW,

and that often works okay in the hills, so wouldn't want to lose that if Radio Five 5 Extra (the digital home of TMS) disappears on digital. What to do... what to do?

Well, I have started to research the options and have found what could be the cost-effective, hassle-free solution. 'Just Connect' is offering the 'JustDRIVE add-on DAB Digital Radio Kit' which can be fitted to any vehicle, so the website says. As it is an add-on I will still have my Jeep's LW/MW/FM radio so when digital Five Live Extra switches to horrible football commentary or loses coverage altogether, I should still, if the signal's OK, get TMS on Radio 4 LW. For general driving on the beaten track I will have my

beloved 6Music on tap and many other digital options to choose from – happy days!

The JustDRIVE system includes a DAB antenna that will be fixed to the top corner of the windscreen – it appears small and unobtrusive – a control box connected to the existing system and a small remote which operates the DAB. JustDRIVE is compatible with the Steering Wheel Control Interface, meaning you can control and operate everything through the Grand's radio and factory steering wheel buttons. And, naturally, music can be streamed through an iPod or phone into the Jeep's speakers using an AUX IN connector. I will look into it in more depth, so watch this space. **HE**







### Dyno Development

Our in-house 4wd dyno rolling road is used by us to develop products and tuning on our test cars and aids us in producing all of our tuning we have available today.

The dyno is mainly used for steady state mapping as well as live mapping in the development process which greatly speeds up new tuning packages development as we can make changes to the mapping a lot faster than if we were only to make road test development.

Our Dyno can run very low power up to 2400 Horsepower at the wheels, it enables us to run Front wheel drive and rear wheel drive as well as four wheel drive. It cleverly Measures HP, Torque Time, Tractive effort rpm, Measure AFR / Lambda etc.

It has an automatic weather station Air Temperature Correction, it measures and logs vacuum / Boost as well as having thermocouple EGT channels and built in Knock detection. We measure RPM direct from engine and Roller speed which is used for ramp Mode for Power Graphing. Its steady State mode is used for fine engine tuning. The fine synchronization of road speed between front and rear rollers also enables 2wd cars to be tested with no ABS or Traction Stability faults.



### Silicone Hoses

300TDI Hose Set- Black	£56.00
300TDI Hose Set- Blue	£56.00
D3 & RRS 2.7L TDV6 Hose- Black	£75.00
D3 & RRS 2.7L TDV6 Hose- Blue	£75.00
Puma 2.2L Hose Kit- Black	£88.50
Puma 2.2L Hose Set- Blue	£88.50
Puma 2.4L Hose Set- Black	£88.50
TD5 Defender Hose Set- Black	£60.00
TD5 Defender Hose Set- Blue	£60.00
TD5 Discovery Hose Set- Black	£60.00
TD5 Discovery Hose Set- Blue	£60.00



All prices excluding VAT

### TDV6 EGR Blanking Kit Pre 07

**TDV6 2.7L Egr Blanking bypass Kit designed for MY05 & MY06 cars.**

This kit is designed for both Discovery 3 & RangeRover Sport as well as the Jaguar 2.7L TDV6 models.

If your chassis number is a 5A or 6A chassis number this kit is compatible. EG: SALLAAA12(5/6)A123456.

The BAS TDV6 2.7L EGR blanking or EGR bypass kit as its also known is made from Hi Grade Stainless Steel, supplied in the kit are a set of high temperature resistant seals that are fully compatible with oil and fuel contamination from the inlet gasses of the modern engine. A double seal setup is used for added quality and pressure resistance.



£45.50 exc VAT

### 300TDI Defender Discovery VGT Hybrid Turbo

300 TDI Defender and Discovery Manual or Auto **Variable Geometry Turbo** hybrid conversion is the world's first bolt on Variable Geometry Turbo conversion for all 300 TDI powered Land Rovers.

This turbo uses your existing manifold ends pipes "Bull Horns" from your old removed turbo, though they are available separately from our web shop if required. NOTE: Manifold gasket NOT supplied as part of the turbo kit.

This is based on an exchange for your old standard 300 TDI Turbo returned back to us (a surcharge of £50 will be charged until we receive your old turbo – which must be complete and in basic working order).



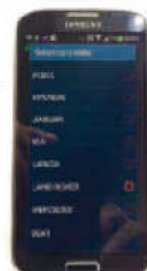
£895.00 exc VAT

### BAS MPF (My Personal Flasher Tool)

With this new revolutionary tool we will be able to offer remap tuning to customers in the most remote areas of the world all via the "Cloud". Internet access will be needed for a web connection.



- Android MPF will work with Phone or Tablet V4 firmware on.
- Connects to your Android via the USB sync cable.
- FULL BAS Admin remote control help on customers interfaces.
- No more files needing emailing to customers.
- Cost effective add-on to some existing remap owners.
- Remove tuning for dealer visits and yearly MOT checks.
- Programming of tuned and original files via the "Cloud".
- Programming still completed if internet drops out.



Hardware: £199.00 exc VAT

Please ring for more information on Remap prices

### BAS Remap Tuning

Remap Defender 2.2 TDCi Puma	£499.00
Remap Defender 2.4 TDCi Puma	£399.00
Remap Defender 2.5 TD5	£295.00
Remap Discovery 2 2.5 TD5	£295.00
Remap Discovery 3 2.7L TDV6	£399.00
Remap Discovery 4 MY2010> 3.0L	£499.00
Remap Evoque 2.2 TDI MY2011>	£499.00
Remap Freelander 2 TDI MY2011>	£495.00
Remap RRS 2.7L TDV6 upto 2009	£399.00
Remap RRS 3.6L TDV8 upto 2009	£399.00
Remap RRS MY2010> 3.0L	£499.00
Remap Transit 2.2 TDCi MY2012>	£499.00

Remap Car General **E.P.O.A.**  
Remap By Post **E.P.O.A.**

All prices excluding VAT



### Performance Intercoolers

Please call for more information regarding our stock of Performance Intercoolers



### TD5 VGT Hybrid Road Turbo

Defender and Discovery Manual or Auto **TD5**

**Variable Geometry Turbo Conversion** is the world's first bolt on Variable Geometry Turbo conversion designed specifically for the TD5 powered Land Rovers. This turbo is designed for upto 180-185 BHP and 430-450Nm with correct tuning to match (Cars may Vary slightly) depending on age, milage covered, fuel quality etc etc. (Automatic cars may produce slightly less power due to the auto box soaking up power).

**We strongly advise you fit this turbo ONLY along side a performance intercooler and a strong air intake pipe where possible.**



£845.00 exc VAT

### Defender 2.4TDCi VGT Hybrid Turbo

The uprated Puma Defender 2.4 TDCi uprated hybrid turbo is designed to give more torque than the standard turbo, The standard turbo is quite small in comparison to our uprated Hybrid VGT which means it runs out of puff quite low in the rpm range. The uprated hybrid turbos main aim is to widen the torque curve over the standard turbo to help with mid range and top end power. The turbo allows a more free revving engine, stronger mid range power delivery and a nicer overall drive. **This turbo is designed to work with a correctly matched turbo remapped car.**



£895.00 exc VAT



# Marketwatch

## MONTHLY 4x4 PRICE REVIEW



One we missed - an ideal toy at £2000

news for anyone looking to buy an older 4x4 with a view to using it as an off-road plaything is that used car traders are eager to get their hands on cars loaded with modern communications systems and electronic driving aids, believing that more and more drivers aspire to owning these new-wave smart cars - technologies so recently introduced through the industry as a whole, that cars with this type of equipment are only just beginning to find their way into secondary used car outlets. The obvious consequence is that the price of not-so-smart cars should eventually ease.

### INTEREST RISES

There are signs that increasing interest in low emissions vehicles is beginning to draw interest away from 4x4s; a recent check on the quickest-selling used cars showed only one SUV, the Nissan Qashqai, among the top 10 and that may not even have been a 4x4. The Qashqai nevertheless continues to be one of the most popular urban 4x4s, hence competitive bids for the red 2011 2.0 dCi N-Tec auto with just over 22,000 miles that took the hammer at a recent Brightwells auction at £11,000, some 90 per cent of book value.

From the urban sophisticate to the country workhorse, and it's no surprise that Land Rover Defenders are still commanding high prices. A batch of Defenders dating from 2003 to 2008 sold for an average of 110 per cent of book value, with even a non-runner 2007 110 County TDCi taking a bid of £4800, which was 70 per cent of what would have been a good bid for a clean runner.

There were bargains to be had; presumably the fact that cars from big fleet operators such as the Environment Agency have unloved modifications such as roof-mounted warning lamps has a damping effect on bids, which could explain why a batch of a dozen Mitsubishi Outlander 2.0 DI-D 4Work and Equipages dating from 2008-2010 went on average for less than half book value, and that included the 2009 Equipage with 44,000 miles that went for £5000, 80 per cent of book value. Ex-police vehicles can also be good value purchases, even ones without the stripes and sirens. A brace of ex-police Honda CR-V 2.2i-DTEC SE models dating from 2010, with a little over 120,000 miles on them, went for £4000 apiece.

If only we'd been at that sale, because we'd probably have bid a bit more than the eventual £2000 that took the hammer for the 1998 Jeep Wrangler 4.0 soft top, half the price we'd have had to pay for a similar car retail. The bargain buy of the day, however, must have been the 2010 BMW X5 xDrive 3.0d that went for £7100 - fair enough, the description said it had engine trouble, but even if the new owner had to fork out another £5000 to get it fixed it would still be a good value purchase.

## More buck for your banger

Demand for second-hand cars is so strong that even older cars are taking prime positions on some used car forecourts, explains Bob Cooke, making bargains hard to find

**T**he September plate change is usually good news for anyone looking to buy a good value second-hand car as thousands of motorists upgrade to a new model, while their trade-ins swell the ranks of vehicles crowding used car outlets, usually driving down second-hand prices as competition between dealers intensifies. That doesn't look as if it's going to be the case this year, as demand for cars, new and used, continues to spiral upwards. New car sales in Great Britain are up more than six per cent year on year, while demand for used cars has increased to such an extent that traders are being forced to buy older cars to keep their stocks up.

Used car pricing experts Glass's Guide reports that the number of cars over 10 years

old being sold at auction has increased by 50 per cent since the start of the year, and dealers are paying over the odds to secure them - the average price of a 10-year old car in January was £725, but by June it had risen to £875. That trend is enhanced by the time the car gets on to the trader's forecourt, because more than likely the car would have needed more tidying to get it ready for sale, eating into potential profits.

At the same time it's noticeable that the quality of older cars is improving all the time, so many cars that once would have been considered 'bangers' are now appearing at auction in excellent condition, so even if they command a higher than usual price they could still be regarded as good-value purchases.

Something that might develop into good



Cheap at twice the price



One careful (police) owner



## FOCUS ON: KIA SPORTAGE

**GO FOR: 2.0 CRDI KX-4      AIM TO PAY: £25,000**

**T**he all-new Kia Sportage, in a dealership near you soon, has strayed even further from the model's origins as a hard-core off-roader, it's now a car designed to be looked at in fashionable parts of the city rather than being a practical country estate. Good news is that dealers around the county are eager to shift remaining stocks of the current model, some offering over £1000 off the normal list price of new and nearly new cars, some with only a couple of miles on them. While the current Sportage may not match the refinement and sophistication of the Nissan Qashqai or Volkswagen Tiguan, there's no denying the value for money in terms of high equipment levels, excellent build quality and good fuel economy from the 2.0-litre turbodiesel engine. The Kia also outdoes all its more established opposition with its seven-year/100,000-mile warranty.

For 2010 the Sportage had already thrown off its hard-core origins to become a modern looking crossover with dynamic exterior styling and a spacious interior, but retaining useful SUV practicality. Beware that most models in the Sportage range are two-wheel drive, AWD was available only with the 2.0-litre petrol or turbodiesel engine, with a choice of manual transmission – six-speed in the turbodiesel, five-speed in the petrol version – or six-speed automatic. From 2014 the 2.0-litre petrol engine was dropped, from then on AWD was applied only to the 2.0 CRDi. The turbodiesel develops a punchy 134 horsepower in the KX-2 and KX-3, good for 112mph and nippy 10.9-second 0-60mph acceleration, returning 49.6mpg and exhausting 149g/km of CO<sub>2</sub>. The engine is uprated in the KX-4 to deliver a heady 181bhp, giving it 120mph capability and a 9.4-second 0-60mph time. Consumption is still good at 46.3mpg, CO<sub>2</sub> emissions only a little worse at 158g/km with the manual transmission.

Equipment levels are high even in the KX-2, including 17-inch alloy wheels, air conditioning, electric windows front and rear, part-leather upholstery, panoramic sunroof, remote central locking, trip computer, rain sensor, cruise control and Bluetooth connectivity, prices starting at £23,600 for the manual and £24,910 for the automatic.

The more opulent KX-3 adds full leather with heated seats front and rear, auto headlamp control and 19-inch alloys, listed at £25,500 for the manual and £26,810 for the automatic, add £800 for the sat-nav version. From last year all Sportages were equipped with trailer assist electronics – it's rated to tow 1600kg – while top versions get a seven-speaker infinity stereo and Flex Steer which offers three levels of assistance depending on conditions.

The list price for the top KX-4 is £28,200, or £29,510 for the automatic, but good deals abound. A typical example was the white 5-mile old 2015 2.0 CRDi KX-4 on offer for £26,985 at Westdrive of Braintree (01376 409874), more than £1000 off the new-car price for a car featuring all the top-of-the-range equipment including parallel park assist, 7-inch touch-screen sat-nav and Xenon headlamps. Flear and Thompson of Dunfirmline (01383 697937) were asking £26,390 for a similar car, while Fine Cars of Gosport (02392 119842) had dropped the price to £26,000 for a KX-4 with just 100 miles on it.



## Buying Guide Archive

### What are you looking for?

We have run a number of detailed **Buyers' Guides**, useful if you are thinking of changing your 4x4, or buying for the first time. **Back Issues** are available by calling 0845 241 5159 or online at: [www.4x4i.com](http://www.4x4i.com)

#### Audi Q7

Issue August 2015

#### Daihatsu Terios 1997-2005

Issue May 2011

#### Jeep Grand Cherokee 1999-2004

Issue July 2013

#### Jeep Grand Cherokee 2005-2010

Issue September 2015

#### Jeep Wrangler TJ

Issue October 2014

#### Land Rover Discovery 3

Issue September 2014

#### Land Rover Freelander

Issue February 2013

#### Land Rover Freelander 2

Issue April 2014

#### Nissan Pathfinder

Issue October 2015

#### Range Rover 1970-1995

Issue January 2013

#### Range Rover Evoque

Issue July 2015

#### Range Rover Sport 2005-2012

Issue June 2013

#### Skoda Yeti

Issue March 2015

#### Suzuki Grand Vitara

Issue May 2015

#### Suzuki Jimny

Issue January 2014

#### Toyota Land Cruiser 2003-2009

Issue December 2014

#### Toyota Land Cruiser 2010-2015

Issue June 2015

#### Toyota RAV4

Issue August 2014

#### Volkswagen Touareg

Issue April 2015

### COMPARISON BUYERS' GUIDES

#### BMW X5 v Volvo XC90

Issue May 2013

#### Honda CR-V v Nissan X-Trail

Issue April 2012

#### LR Defender v Jeep Wrangler

Issue August 2012

#### Mitsubishi Shogun v Grand Cherokee

Issue May 2012

#### Porsche Cayenne v VW Touareg

Issue April 2013

#### Range Rover v Mercedes-Benz ML

Issue November 2012

#### Seven-seater SUVs

Issue March 2014

#### Suzuki Jimny v Mitsubishi Pinin

Issue September 2012



# Club World

## MONTHLY CLUB ACTION

What's your club doing? *Louise Limb* goes clubbing to find out what is happening in the 4x4 Club World. If your club has news or forthcoming events it would like us to promote, then just email:

**4x4.ed@kelsey.co.uk** - marking your message **Club News**



## The CORSE Big Weekend

**GLORIOUS SUNSHINE PROVIDING** the best weather possible for the CORSE (Competition Off Road South East) Big Weekender this August, at the Hook Farm site, Ardingly, West Sussex. For Chairman Mark Edwards and his hardworking team this was a huge relief after the months of careful planning and preparation and as competitors and spectators streamed through the gates bringing everything from space framed buggies to a standard Fiat Panda 4x4, together with a team of promo models from Spearmint Rhino, the action packed weekend would certainly not be short of entertainment.

Saturday began with a Gymkhana, a feature of every good British 4x4 event from the time Spencer Wilks first put the Land Rover into production. Mark set up a series of ingenious tasks on the Friday, intended to challenge driving ability, agility and test trust in a navigator. These included timed towing of a spare wheel through a series of five gates via a couple of snatch ropes and blindfold driving over 10 trialling gates. A full size version of passing a pole with a metal ring over a length of wiggly wire without touching it had everyone on tenterhooks. Most drove it slowly

and steadily while the less patient competitors tried a speedier approach which had them restarting quite a few times, spectators enjoying every minute.

Amid throwing footballs, tennis balls and a sponge from vehicles into a series of four buckets, Team Spearmint Rhino arrived, the grid girls, one from as far afield as Wales eager to learn a spot of off-road driving and take part in the day's action. While everyone enjoyed a fabulous barbeque style lunch, courtesy of 'Kim and Co', the SR ladies learned the ropes in a Suzuki SJ, later trying out the proto class modified trailers with the owners co-driving. As Mark notes: 'there seemed to be a lot of testing that the fiddle brakes worked!'

Eventually, after a day of six mentally challenging tasks, drivers and co-drivers were able to enjoy a brief rest in the late afternoon sun before preparing for the night trial. They'd been given the opportunity to walk the four section course during daylight hours and had to try and remember it once the light had faded. By 8.30pm it was judged dark enough to begin and with glow sticks saved from Mark's rave days stuck to marker posts to guide competitors, the trial began. However,

once the incredibly bright LED light bars were switched on, the little glow sticks were soon outshone. In spite of no moon and a very eerie dark wood, everyone completed the first section without penalties, down to gate one. Section two featured a very severe cross axle and no one thought the Fiat Panda 4x4 would make it through, the cross axle deep enough to swallow its bonnet. However, to everyone's amazement it did, a credit to the driver, though a grandstand view of under body rust convinced spectators of the little Fiat's dubious reputation. The plucky little car tried the deep gullies of section three but with small tyres it was never going to push the bow wave of mud away from its front bumper. A novel approach to recovery in the dark had people physically trying to lift the Panda over the ruts! With some amazing driving, after the challenge of the more difficult sections three and four, scoring between one proto class off roader and a Suzuki SJ was equal, points counting towards Sunday's main trial.

Kim, who had taken part in the night trial, was up and cooking breakfast for everyone at 7.30am on Sunday as drivers readied their motors for the main competitive event of the weekend. Six sections complete before lunch, re-using some from the previous day was a credit to Mark's organisational skill and the first of the afternoon was laid out in woodland new to the CORSE chairman, the boss christening it by breaking the front differential on his Suzuki SJ 413. With four more sections it was becoming clear that no one could catch Tom Mew in his Suzuki engine Proto class, his final score a dazzling zero penalty points. With Tango on three points close behind, Jamie on 11 and Michael on 13, the latter in his first ever trial as driver the night before, the winner's podium was hard won and a fitting close to a fabulous weekend.

Mark would like to thank all those welcome supporters who went away smiling and for their sponsorship and support for the weekend, a huge vote of thanks to: C R Allen, Land Rover dealer Brighton, Spearmint Rhino UK, Tyre Express Bognor Regis, Automobile Services Littlehampton, Hotel Du Vin UK, Liftmaster UK, Lazer Lamps UK, Monster Energy Chevy pick-up truck. Photographs courtesy of Mark Edwards, Ray Edwards, Tom Mew.

**Check out: [www.4x4corse.co.uk](http://www.4x4corse.co.uk)**





# Cornwall and Devon Leafers Trial

**MEMBERS OF WYE** and Welsh LRC, along with Somerset and Wiltshire LRC joined Cornwall and Devon LRC on August 9th at Thorns Cross near Exeter for a Taster Day RTV trial especially for leaf sprung Land Rovers, organised by CDLRC. Newsletter editor Aaron Lillicrap and brother Ross put in the hard work planning and preparing and were rewarded with a varied and exciting turnout, a couple of 101 Forward Control trucks turning up alongside a wealth of Series Ones, Twos and Threes.

As a visiting correspondent, Richard Hannam from Wye and Welsh LRC notes, the

30 odd vehicles had made the journey from as far away as Kent and were treated to a challenging, stony site with plenty of gorse and bomb holes to give the leaf springs a 'proper workout'. He adds that some, fresh from back gardens, 'still had a nettle or two in the back' and that 'the rattle of tailgate chains and big ends could be heard, with a blue haze settling everywhere.'

The Forward Control 101s had a particular job to tackle the tightly laid out course, their drivers sweating as they wrestled the big trucks and each spending as much time off

their wheels as on, 'saving tyre wear'. One competitor, Ken Brain, in flat cap and tweed jacket was dressed for the occasion, though picked up much mickey taking for being the only one to do so.

Cornish pasties for lunch added tasty period detail while Alex Moore in Class 7 won overall, Si Badge coming in 2nd. The event was a huge success and a marvellous model one hopes will be repeated both with CDLRC and at many other clubs around the country. Photographs courtesy of Chris Perry and Teigen Lillicrap. [www.cdlrc.co.uk](http://www.cdlrc.co.uk)



## War of The Roses 2015 Rematch

**THE RED ROSE** Land Rover Club have been hosting the War of The Roses for many years now and 2015 brought together some of the same clubs that have been competing for the trophy since the 1980s.

2015's event on the 5th July, sponsored by Lakeland Land Rover, featured the now familiar, unique mix of timed, brain mangling tasks over rough terrain combined with a test of driving ability, off road agility and knowing

exactly what to do with trailers, poles and bogs. All this takes place above the idyllic Lake District village of Cartmel and the spectating is second to none.

This year the winners were Red Rose Team A and the coveted Team Spirit award went to Red Rose Team B. It would be good fun to see the White Rose county take them on again in 2016! Photographs courtesy of Rob Clarke. [www.redroselrc.co.uk](http://www.redroselrc.co.uk)





# Let's Go Off-Road

## WHERE TO GO TO ENJOY YOUR 4X4

### PAY AND PLAY SITES

Here are some of the best places to go off-road in the UK. We would always advise that you call to check dates and times. If you have a site that ought to be included, email us on [4x4.ed@kelsey.co.uk](mailto:4x4.ed@kelsey.co.uk) and mark your email **4x4 PAY AND PLAY**

#### ASH 4X4

Ash 4x4 Ltd have a Pay and Play site at Chirk Quarry, LL14 5AH, near Shrewsbury. Check the website as the venue may vary between Hawkstone Park and Chirk Quarry. There are no toilets, food or other amenities, just very good off-roading. Call Billy Hilton on 07581 030331 or go to the website: [www.ash4x4.com](http://www.ash4x4.com)

#### AVALANCHE ADVENTURE

Run by Avalanche Adventure, this venue is at Sibbercroft, near Market Harborough. Pay and Play days and other 4x4/off-road activities. Give them a call on 01858 880613 or look for more details on: [www.avalancheadventure.co.uk](http://www.avalancheadventure.co.uk)

#### BALA OFFROAD LLANNERCH YR ERYR

The Llannerch yr Eryr farm and off-road site is a very popular and well-known pay and play site. Spectacular views over Bala lake and surrounding mountains. Always ring to check the weather in the winter months. £30 a day, £20 after 1pm. Call: 07850 800709. [www.balaoffroad.co.uk](http://www.balaoffroad.co.uk)

#### BLUE LIGHT OFF ROAD CLUB

This off-road club operates in southern England, and is open to all 4x4s. Prices vary, but is usually £45 per vehicle and the Pay and Play site is often at the Army Training area at Bagshot, Surrey. Go to: [www.bluelightoffroadclub.co.uk](http://www.bluelightoffroadclub.co.uk) or contact John Amos on 07805 656947 or email: [blorc@hotmail.com](mailto:blorc@hotmail.com)

#### BURES PIT

Large sand pit quarry in North Essex. The prices are £30 per vehicle, but that can include up to four passengers. There's a catering van on site. To learn more contact Terry and Karl at [events@bures-pit.co.uk](mailto:events@bures-pit.co.uk) or to learn more, go to: [www.bures-pit.co.uk](http://www.bures-pit.co.uk)

#### DEVIL'S PIT

Devil's Pit is 60 acres of different courses (novice, experienced and expert) at Barton-Le-Clay, Nr Luton, MK45 4LG (A6) Bedfordshire (OS Grid ref: TL078297). £26 per vehicle. Children (under 16) are free. Toilets and catering, first aid and recovery facilities. Tel: 01582 883349 Email: [devils.pit@virgin.net](mailto:devils.pit@virgin.net) [www.devilspit.co.uk](http://www.devilspit.co.uk)

#### ESSEX, ROCHFORD & DISTRICT 4X4

Essex, Rochford & District 4x4 Club have a 4x4 site located on Creeksea Ferry Road, Canewdon, Essex, open on the second Sunday of every month for both members and non-members, check out: [www.4x4er.co.uk](http://www.4x4er.co.uk)

#### FRICKLEY OFF-ROAD CENTRE

Frickley Off-Road Centre is near Doncaster in South Yorkshire, DN5 7BU and includes climbs, hollows, woodland and rock climbs suitable for the novice to the experienced off-roader. £25 per vehicle, all road-legal 4x4s welcome. Call Charlie: 07836 544335 Email: [offroad@frickley4x4.co.uk](mailto:offroad@frickley4x4.co.uk) [www.frickley4x4.co.uk](http://www.frickley4x4.co.uk)

### 3/6 NOVEMBER SEMA SHOW

It's that time of the year again! Time for the amazing SEMA Show, undoubtedly the most extraordinary custom, tuning, performance show of the year. Based in Las Vegas, USA, over the 3rd-6th November, the show is the highlight of the American aftermarket scene and as you can imagine is simply enormous. For us it has some of the wildest and wackiest 4x4 conversions, together with all the latest aftermarket products – many of which will find their way to the UK. The Show is not actually open to the public, so you need to have a trade connection to be able to get a ticket. However, there's a great website which has a



marvellous gallery of vehicles and products from previous years that you can visit. We will, of course, have our usual photo report from Las Vegas in a forthcoming issue – and that's just like being there but without the jet lag. Ok, maybe not, but it does usually have some superb photos! If you want to know more, go to [www.sema-show.com](http://www.sema-show.com)

## UK EVENTS DIARY

### SEPTEMBER

19/20

#### LAND ROVER OWNER INTERNATIONAL SHOW

East of England Showground, Peterborough. [www.lroshow.com](http://www.lroshow.com)

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#### PAY AND PLAY DAYS

**SOUTH YORKSHIRE** Frickley Off Road Centre  
**NEW FOREST** Muddy Bottom 4x4

26/27

#### PAY AND PLAY DAYS

**COUNTY DURHAM** Kirton Off Road Centre

27

#### PAY AND PLAY DAYS

**WEST SUSSEX** Slindon Safari

### OCTOBER

4

#### NEWBURY 4X4 AND VINTAGE SPARES DAY

Newbury Showground, Berkshire [www.4x4sparesday.co.uk](http://www.4x4sparesday.co.uk)

#### PAY AND PLAY DAYS

**BEDFORDSHIRE** Devil's Pit  
**WEST SUSSEX** Piccadilly Wood  
**GWYNEDD** Bala Off Road  
Llannerch yr Eyr  
**SOUTH YORKSHIRE** Frickley Off Road Centre  
**NEW FOREST** Muddy Bottom 4x4

11

#### PAY AND PLAY DAYS

**ESSEX** Essex, Rochford & District 4x4  
**BERKSHIRE** Harbour Hill

18

#### PAY AND PLAY DAYS

**BEDFORDSHIRE** Devil's Pit  
**SOUTH YORKSHIRE** Frickley Off Road Centre  
**NEW FOREST** Muddy Bottom 4x4

25

#### PAY AND PLAY DAYS

**ESSEX** Bures Pit  
**WEST SUSSEX** Slindon Safari

26/27

#### ADVENTURE OVERLAND SHOW

Stratford Racecourse, Stratford-upon-Avon, Warwickshire 02476 731971 [www.adventureoverlandshow.net](http://www.adventureoverlandshow.net)



We aim to make this feature the most comprehensive off-road events' calendar published, and you have to admit, there are a lot of events listed here! However, we know we can do better, but need to hear from you, your club, association or travel company. If you are planning something, send us the details and a couple of pictures and we will highlight your event, off-road day, expedition or weekend jolly in these pages. Just send to [4x4.ed@kelsey.co.uk](mailto:4x4.ed@kelsey.co.uk) mark the subject of the email: **4x4 CALENDAR**

## OCTOBER

16

## DECEMBER ISSUE OF 4X4 MAGAZINE ON SALE

It's all about driving this month, as we take a look at what is on offer for those who want to improve their off-road driving abilities, or just find somewhere to have some fun, often in someone else's vehicle. Great for those who have never actually taken their own 4x4 off into the muddy stuff, why not take a course and get some expert tuition? We will also have a technical description of the new 4x4 SUV from Bentley, no less! Unlikely it will spend much time off-road, but surprisingly it looks quite capable. Why not take out a subscription, never miss an issue, and get the magazine at a discount price? Go to page 80 for the latest offers.

## NOVEMBER

1

### PAY AND PLAY DAYS

<b>BEDFORDSHIRE</b>	Devils Pit
<b>WEST SUSSEX</b>	Piccadilly Wood
<b>GWYNEDD</b>	Bala Off Road
<b>SOUTH YORKSHIRE</b>	Frickley Off Road Centre
<b>WEST YORKSHIRE</b>	Parkwood 4x4

### ORGANISED DRIVE

**KEILDER SAFARI 4X4.** Driving some tracks through the Keilder Forest not open to the public. Call 0844 588 9965 [www.keilder4x4safari.co.uk](http://www.keilder4x4safari.co.uk)

3/6

### SEMA SHOW, USA

(See separate panel)

8

### PAY AND PLAY DAYS

<b>WEST SUSSEX</b>	Slindon Safari
<b>BERKSHIRE</b>	Harbour Hill

### ORGANISED DRIVES

**NORTH WALES** Landcraft 4x4 Snowdonia Adventure Drives. Call David Mitchell of Landcraft 4x4 on 01678 520820 or check out [www.landcraft4x4.co.uk](http://www.landcraft4x4.co.uk)

15

### PAY AND PLAY DAYS

<b>BEDFORDSHIRE</b>	Devils Pit
<b>NORTH ESSEX</b>	Bures Pit
<b>SOUTH YORKSHIRE</b>	Frickley Off Road Centre

22

### PAY AND PLAY DAYS

<b>WEST SUSSEX</b>	Slindon Safari
<b>ORGANISED DRIVES</b>	
<b>NORTH WALES</b>	Landcraft 4x4 Snowdonia Adventure Plus Drive, for serious off-roaders. Call David Mitchell of Landcraft 4x4 on 01678 520820 or check out <a href="http://www.landcraft4x4.co.uk">www.landcraft4x4.co.uk</a>

### HARBOUR HILL

Harbour Hill, near Aldermaston A340. Non-members £30 (£10 membership, £20 for the day). Wheel washing, catering and toilets available. Call: 07887 533168 Email: [withoutaclub@yahoo.co.uk](mailto:withoutaclub@yahoo.co.uk) [www.4x4-withoutaclub.co.uk](http://www.4x4-withoutaclub.co.uk)

### KIRTON OFF ROAD CENTRE

Kirton Off Road Centre is a massive 600 acre site near Kirton Lyndsey, Lincolnshire, DN21 4JH. Standard days are £40, and there are often camping weekends at £75 inclusive. Check their website or call for more details. Call Paul: 07907 450974 Email: [paul@korc.co.uk](mailto:paul@korc.co.uk) [www.kirtonoffroadcentre.co.uk](http://www.kirtonoffroadcentre.co.uk)

### LANDCRAFT

Offering the chance to get to some superb parts of Snowdonia, David Mitchell's experienced outfit offer some great Adventure drives, and for those more adventurous, there's always Adventure Plus. Paying on the day is £60 (inc VAT), pre-book and save £10. Call 07831 258864 Email: [info@landcraft.co.uk](mailto:info@landcraft.co.uk) [www.landcraft4x4.co.uk](http://www.landcraft4x4.co.uk)

### MUDDY BOTTOM 4X4

The Muddy Bottom 4x4 site is located in the heart of the New Forest (postcode SO43 7FL). All pay and play days have an entry fee of £25, and you need to be a member (day membership is only £1, or annual membership £10). The site has a jet wash, burger van, picnic area and free recovery. Please note that no kinetic ropes are permitted on site, and that you will have to jet wash your vehicle before you leave to avoid leaving any mud on the roads. To find out more contact Carla on 07754 940783 or 07801 088203. Email: [muddybottom4x4@aol.com](mailto:muddybottom4x4@aol.com) [www.muddybottom4x4.com](http://www.muddybottom4x4.com)

### PARKWOOD 4X4 (TONG)

Parkwood is at Tong village, Bradford, West Yorkshire, BD4 0RR. Open 10-4pm, catering, toilets, first aid, vehicle wash, £35 per vehicle including passengers - providing that there are correct fitting seatbelts. Call: 0113 285 4356 Email: [info@parkwood4x4.co.uk](mailto:info@parkwood4x4.co.uk) [www.parkwood4x4.co.uk](http://www.parkwood4x4.co.uk)

### PICCADILLY WOOD 4X4

This site is operational on the first Sunday of every month and based at Colwood Lane, Bolney, West Sussex RH17 5QQ (just off A23). Open between 10am - 4 pm, the cost is £30 per vehicle. There is free tractor recovery, toilets and the all important tea van! You can contact them on 01444 461690/07984 543886, or to find out more, email: [jperver@btinternet.com](mailto:jperver@btinternet.com) or go to: [www.piccadillywood4x4.co.uk](http://www.piccadillywood4x4.co.uk)

### SILVERDALE

Explore this site at Haying Wood, Silverdale, Stoke-on-Trent, ST5 6QQ which has 53 acres of steep wooded tracks, water holes and mud! £25 per vehicle. Open from 10am until 4pm, road taxed vehicles. Tel: 07970 286881. Email: [exploreeoffroad@hotmail.com](mailto:exploreeoffroad@hotmail.com) [www.exploreeoffroad.com](http://www.exploreeoffroad.com)

### SLINDON SAFARI

Slindon Safari, near Arundel, West Sussex, 10am until 4pm; £30 per vehicle, Quads welcome, £15, all riders 16+ and there's a 10mph speed limit. Routes for beginners and more advanced. Call: 01903 812195 or 07802 582826 Email: [johnmorgan@4x4driving.co.uk](mailto:johnmorgan@4x4driving.co.uk) [www.4x4driving.co.uk](http://www.4x4driving.co.uk)

### TRANS PENNINE OFF ROAD EVENTS

Club runs Pay and Play sites at various venues in Derbyshire including Holymoorside, near Chesterfield, S42 7EG; Biggin Quarry, Ashborne, DE6 1QU and Padley Wood Farm, S45 8EL. Gates open at 9.00am and costs are £20 per vehicle. Catering and toilet facilities. Email: [events@tpore.co.uk](mailto:events@tpore.co.uk) Check out: [www.tpore.co.uk](http://www.tpore.co.uk)

## 2016 MACHU PICCHU, PERU 4X4

Now is the time to plan those 2016 holidays, isn't it? We've been taken by the offer that involves a 15-day self-drive in Peru, which will allow you to hit the Inca trail and visit Machu Picchu - one of those bucket list destinations for so many people. The bonus here is that you actually get to drive a full spec Toyota Hilux expedition truck, in convoy with an experienced guide. Peru Safari is actually based in the UK, and run by Explore Camper Van Hire Ltd. The advantage with this is that you can have a full discussion about the trip with someone based in the UK, allowing you to ask all those necessary questions.



One word of warning, however, should you go you'll probably want to add on a trip to the Galapagos Islands! All of which can be organised for you (obviously you won't be driving when you are there!). To find out more call 01257 254929, making sure you mention 4x4 Magazine sent you, email [info@perusafari.com](mailto:info@perusafari.com), or go to [www.perusafari.com](http://www.perusafari.com)



# ODDBALLS

FORGOTTEN 4X4S

## 2015 LAND CRUISER 70-SERIES

**As mass production of the British Land Rover Defender appears to be coming to an end, one Japanese icon is still going strong. Paul Guinness explains more**

**A**s far as British buyers are concerned, the Toyota Land Cruiser is now a seriously upmarket machine, with the V8 flagship costing in excess of £65,000. That places it just about midway price-wise between the most expensive Land Rover Discovery and the entry-level Range Rover, ensuring it appeals only to the most well-heeled of SUV buyers. And that means the Land Cruiser has well and truly strayed from its no-nonsense all-purpose roots.

In certain export markets like Australia, Africa and South America, however, the situation is different, where the Land Cruiser is still available in a spec that makes it the Toyota in the same area of the Land Rover Defender. We're talking about the Land Cruiser 70-series, which (much to the surprise of many Brits, no doubt) has been in continuous production since 1984.

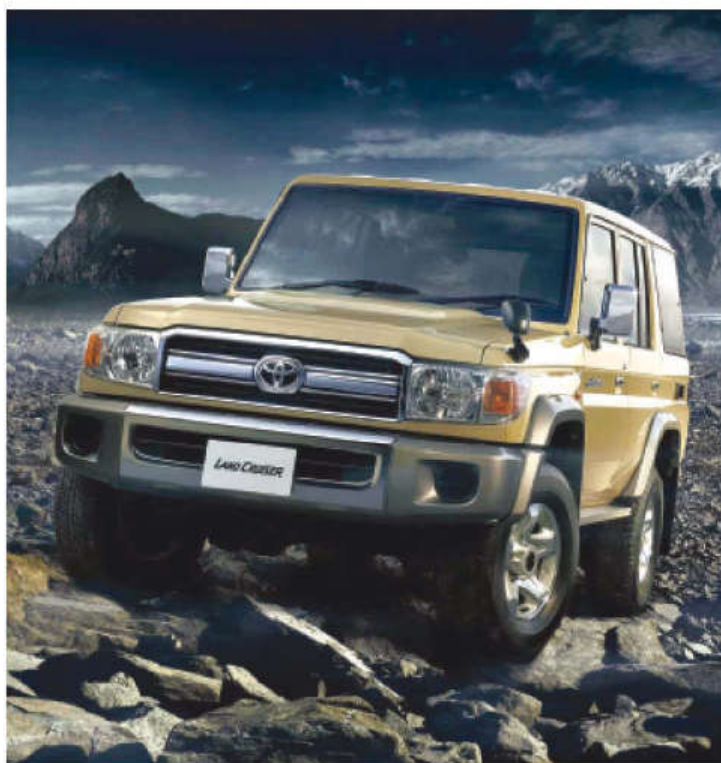
When the 70-series arrived to replace the ageing 40-series, the Land Cruiser entered a more modern world via sharp, angular styling and a more contemporary overall look. Under the skin, however, it was pure workhorse thanks to its separate-chassis design featuring a live rear axle and leaf-sprung all-round suspension, with the front end not receiving coil springs until 1998. That's how basic and agricultural the 70-series was, much to the delight of those fans around the world who appreciated its rugged, workmanlike nature.

The Land Cruiser range has moved on over the years, of course, with increasingly more sophisticated models arriving – still boasting astonishing off-road ability, but with the kind of creature comforts that buyers of upmarket SUVs expect. And yet, throughout it all, the 70-series of 1984 has continued in production, appealing to a very specific group of buyers in some of the toughest (terrain-wise) markets in the world.

Interestingly, the 70-series hasn't been available in its Japanese homeland for a good many years. Or rather it hadn't... until Toyota announced that for the vehicle's 30th anniversary in 2014, it would be back on sale in Japan for just a 12 month (2015-model) period. Japanese buyers would have a chance to buy into an all-time 4x4 legend, but only for one year. After that it would be withdrawn again, with production switched primarily to the Ovar-based plant in Portugal, which has been assembling Toyotas since 1971.

These days the 70-series is available in three- and five-door (short- and long-wheelbase) guises, in addition to single- and double-cab pick-up versions. Power, meanwhile, comes from a range of six-cylinder and V8 (petrol and diesel) engines, the biggest of which is the Australian-spec 4.5-litre V8 oil-burner.

Interestingly then, as Britain prepares to say goodbye to its perennial favourite – the Defender – in the coming months, Toyota continues to offer its own 31-year old equivalent in those markets that demand no-compromise off-road prowess and unrivalled reliability. Despite what Toyota's UK price list might suggest, the classic 70-series is alive and well – and still performing a vital role in the world's most demanding markets.





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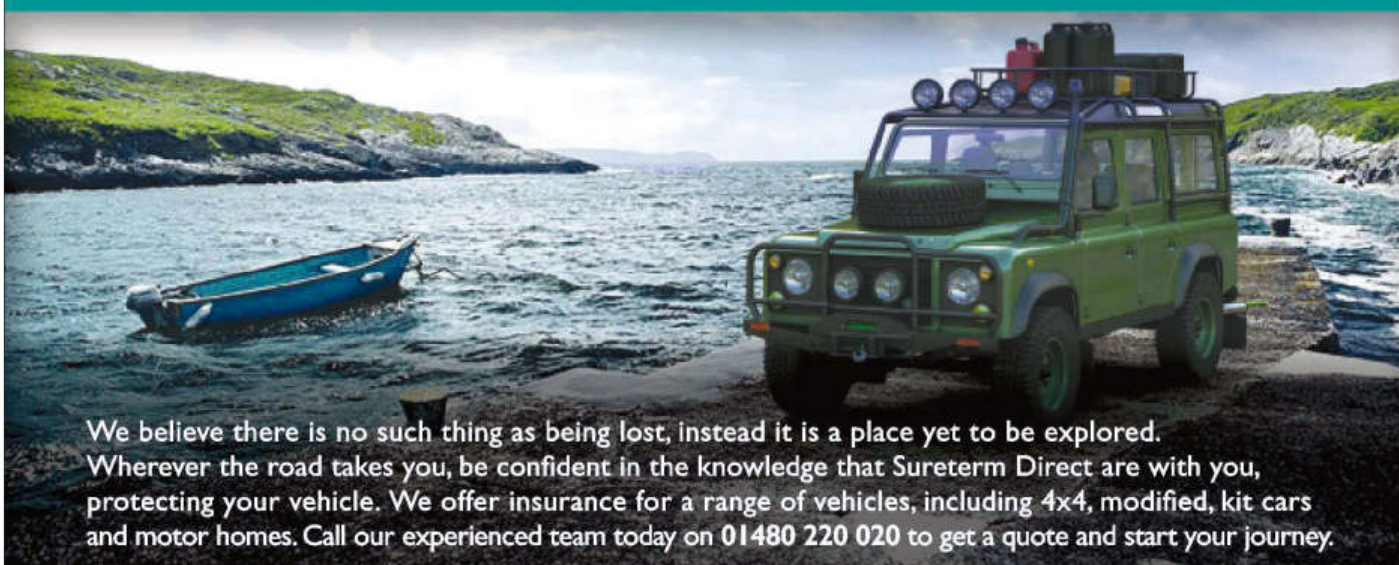
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- UK and European breakdown cover • 4x4 community rescue, off-road, green laning and organised non-competitive off-road cover
- Cover for charity events • Up to £100k legal expenses • Salvage Retention

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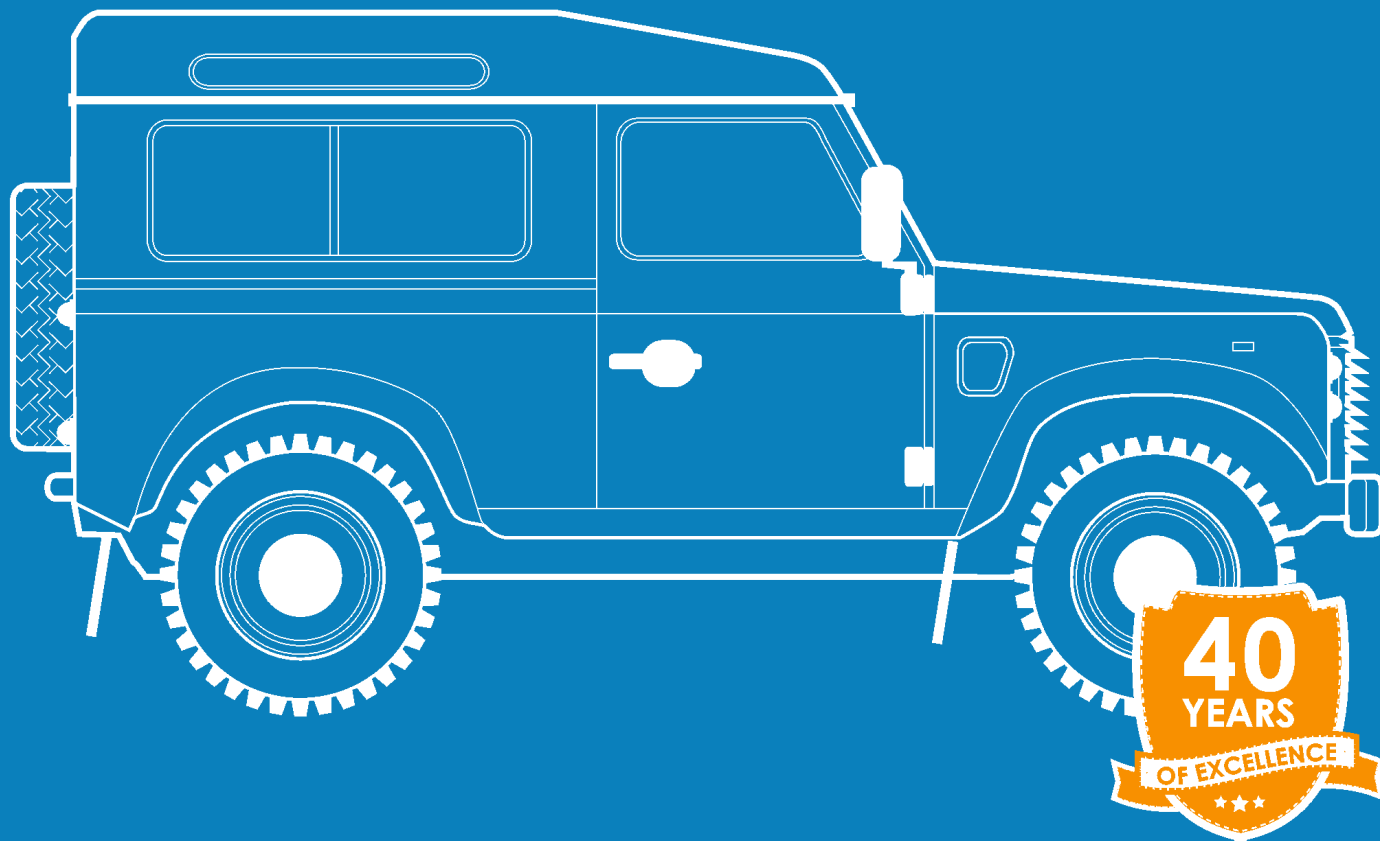
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## DODGE

### 100 HOLMES 750 WRECKER



**1985, £2,750 + VAT.** Wrecking gear v8 engine, very rare truck. In need of a little restoration, cab needs welding and the body tidying. Equipment all works, starts and drives. 01603 271929 (SN)

## JEEP

### GRAND CHEROKEE LIMITED



**1999, £1,000 ono.** 12 Months MoT service history, maroon, leather up holsters, dog guard, tow bar. Over £1,000 spent on maintenance (Brakes, Sump pan etc.) In past 12 months. New job forces sale. Northamptonshire. 07873 775705 (SN)

### GRAND CHEROKEE XJ



**1997, 120,000 miles, £1,595 ono.** Black, 4.0l petrol/pg automatic, service history, MoT until May 2016, leather seats, everything electric, ac, tow bar, cheap to run (Ipswich to Luton airport and back=£40), cheap to tax (only £20 per month). Suffolk. 07549 586913 (SN)

### WRANGLER SAHARA

**1998, 68,000 miles, £4,995.** 4 litre, auto, LPG conversion, service history, black tan trim, long MoT, good condition throughout. Devon. 07831 406310

## LAND ROVER

### DEFENDER



**1991, 111,000 miles, £3,600.** 200 series. MoT September 2015. Good condition. Cumbria. 07971 230709 (SN)

### DEFENDER 110

**1984, 107,000 miles, £3,600.** Marine blue, truck cab, Ivor Williams hood, tow hitch, 3 original seats plus belts, 2.8 Isuzu turbo engine diesel, June 2015 MoT, 1 owner. Pembrokeshire. 07966 524206

## DISCOVERY



**1996, £2,995.** 2.5 diesel turbo, recent head skimmed, valves, water pump, thermostat, front shocks, brake pads, wiper blades, battery, tow bar, radio CD, economic sort after model with 11 months MoT. North Yorks. 07851 837752

## DISCOVERY



**2003, £4,995.** Excellent condition for year, MoTd and just having a full service, for further info call. Lancashire. 0161 682 0568 or 07903 458974

## LAND ROVER



**1976, £1,850 ono.** Pick-up based on 1976 lightweight. MoT June. Original chassis. Rear tub. Bulkhead. New parts, too many to list. Nice runner. 21/4 petrol. 12V electrics. Sorry no soft top. Somerset. 01934 515862 (PB)

## LAND ROVER DEFENDER 90



**1991, £3,600.** MoT July 2016, alloy wheels, good condition, anyone interested in a p/x for Series Two Field Marshall?. Cumbria. 07971 230709

## SERIES 2A

**1967, £5,500.** Petrol, swb, Farey overdrive, FW hubs, hardtop with windows, galvanised chassis + rebuild 10 years ago, historic road tax. Midlothian. 01316 697033

## SERIES I



**1954, £4,750 ono.** 20l petrol. Tax and MoT exempt. Family owned for 28 years. Good condition for year. Needs TLC. Need quick sale, no time on my hands. Derbyshire. 07432 480076 (PB)

## SERIES IIA



**1965, £3,450.** SWB. Petrol. Overdrive. FWH. Excellent Chassis & Bulkhead. 7 Seats. Drives Superb. Genuine Series 2A with faultless engine & gearbox. MoT. Lancashire. 07980 336922 (SN)

## SERIES IIA LWB RECOVERY/ PICKUP



**1965, 50,000 miles, £4,500.** Fitted Harvey frost crane excellent condition 12month MoT. Overdrive freewheeling hubs power steering. Must be seen drive away. Crane can be removed if required. Devon. 07932 645544 / 01626 438876 (SN)

## SERIES III



**1976, £4,950.** Petrol, overdrive, hardtop with windows. 7 Seats. New Tyres. Good Chassis. Excellent Body no dents MoT March 2016. Lancashire. 01253 811073

## SERIES III



**1972, £3,500.** 2286cc Petrol. New tyres. Good work horse, still being used for work round the village. MoT valid to December 7th. 01582 882354 (SN)

## SERIES III SWB



**1983, 90,000 miles, £3,995.** Station wagon, A reg, safari roof, 2.25 petrol, 12 months MoT, waxoyled chassis, excellent condition. Cheshire. 07500 223408 (SN)

## SWB HYBRID V8 AUTO

**1971, £3,500.** SWB Hybrid V8 auto. Roll cage, big wheels and tyres. Full harness seatbelts. Tax exempt. MoT till Oct 2015. Range Rover chassis coil sprung disc brakes all round. Sell or swap for Mk3 Zephyr 6 auto. Must be a runner. Lancashire. 01204 302686 (PB)

## MITSUBISHI

### SHOGUN 3.2 DI/D



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## WARRIOR



**2003, £4,000.** New MoT, 4.4 diesel, new battery, exhaust, complete dampers, Ivor Williams Lifestock canopy, good as new garaged truck. Hants. 023 9225 4465

## RANGE ROVER

### 2.5 DHSE

**2002, 110,000 miles, £5,999.** Auto, 4 door, 4x4, P38, power steering, electric windows & seats, memory seats, remote control locking, ABS, electric sunroof, full leather interior, cruise control, alarm. Photo on website. By appointment only (please do not text or email). 02380 766870 or 07545 703474

### H REG

**£600 ono.** 3.9 V8 Automatic. All Good Parts-But body work gone. Ideal for spares or off roading. Wales. 07975 825696 (SN)

### MK1 CONVERTIBLE



**1979, 36,600 miles, £3,300.** Cabana limited edition, TDi engine fitted at 28,000 miles, bills for over £1,100 from 4x4 specialist including new clutch. Surrey. 07984 469856

### VOGUE

**1994, 90,000 miles, £7,995.** SE A 3-9 SE, auto, 5 door estate, blue, soft dash model in metallic blue with full grey leather and electric seats, electric windows, electric sunroof, central locking, alloys, ABS. Photo on website. By appointment only (please do not text or email). 02380 766870 or 07545 703474

## TOYOTA

### HILUX

**1996, £2,500.** Twin cab, with big wheels and tyres, side step, rear ball bar, spares or repair. Berkshire. 07503 646379 (SN)

## LANDCRUISER



**2001, 136,137 miles, £3,750.** Colorado GX. 1 year MoT. New tyres, batteries, brakes, ball and pin tow hitch. Air con, e/w, e/m, central locking, radio/cassette with 10 CD changer. All in good working order. With a few scuffs and marks from general use. Can deliver at cost. Lincolnshire. 07860 655984 (PB)

## LANDCRUISER II



**1995, 128,272 miles, £3,795.** 3 Doors Manual Diesel, Red MoT 15/09/15. Overall good condition to body and interior. Wheel bearing in front driver will need attention. 01945 773871 (SN)

## WILLYS

### EX SWISS ARMY JEEP

**1945, £11,000 ono.** Pulling and starting planes, good condition tnt exempt, gear with pulley, 5 new tyres, extra strong chassis, four times stronger than usual, transmission the same, good runner. Lincolnshire. 01522 722935 (SN)

### JEEP M368A



**1960, £15,000.** Original Vietnam Military police vehicle, restoration completed in 2012, excellent condition and driver with full mot, complete with armoury, ready to show or play. 07956 442053 (SN)

### KNIGHT SEDAN



**1926, £15,000.** Petrol black gangster car. Bodywork excellent interior original but need updating. No offers. Full history letters paperwork old logbooks. 07552 718657 (SN)

### WILLYS JEEP



**1992, 54,000 miles, £5,850.** Soft top, silver recent full service, locking front hubs, low high range two or four wheel drive. Based on jeeps CJ-3b alloy wheels full weather gear removable in minutes roll bar spots and dateless plate. Norfolk. 01953 600109 (SN)



## ALL OTHER VEHICLES

### CHEVY ASTRO



**1991, 115,000 miles, £1,555.** V6 auto, tow bar, 8 seats, MoT November, sound engine and gearbox, good condition in and out, reliable daily driver, no rust. Surrey. 01932 769676

### IBEX



**£10,500.** Rebuilt Fours Engineering. Full S.A.V. test. All details on request. Denbighshire. 01824 702784 (RB)

### SCAMMELL EXPLORER

**1955, £17,750.** 6x6, Meadows Petrol Engine, In complete working order, Ex army model. Lancashire. 07836 579872 (SN)

### STEPSIDE



**1964, £9,500.** Full MoT. Ready to drive away, only driven 2 days since imported. Lots new stuff inc Ball joints, springs, battery, wood bed etc; over 3000 spent. Taxed MoTd, registered. Call for details and quick sale. 07774 322110 (SN)

## VEHICLE PARTS

### AWD 21-16

**1990, £POA.** Perkins Phaser engined header tank and under bumper air dam. Also TK head lining. Cheshire. 01270 820568 (PB)

### CHEROKEE JEEP WHEEL SPACERS

**1996, £50.** Also available: side steps in aluminium £100. 07977 397346 (CG)

### DIESEL LIFT PUMP FOR A LEYLAND FG



**£various.** Suits a 4-98 3.8 Engine. NOS Should also fit Nuffield Tractor with the same engine but check the photo £30 each. Rear Wheel Cylinders for a FG700. Again NOS £60 the pair. Hampshire. 07971 530398 (SN)

### ISUZU D-MAX TAILGATE

**2002, £70.** New and unused in primer, boxed, cost £140 plus VAT, price plus postage. Dorset. 07966 139773

## LAND ROVER



**£25 + post.** Rear step. Not new but works. Can collect from near Manchester airport. Manchester. 07711 513304 (PB)

### LAND ROVER 300 TDI ENGINE AND GEARBOX



**£575.** Complete unit. Recent service, water pump and belt. Can be heard running and even driven at the moment. Complete with all ancillaries. View/collect Southampton area. Hampshire. 07971 530398 (SN)

### LAND ROVER SERIES II

**1973, £300 the lot.** Hardtop, less engine, gearbox and wheels. For rebuild or parts, all aluminium. This could be a road tax free vehicle restored. Staffordshire. 01538 266215

### LANDROVER DISCOVERY/DEFENDER

**£295.** Tyre and wheel set. 2 Kumho road venture kit. 2 Wildcat EXT MT. 1 remould MT. Shropshire. 01691 656031 (PB)

### MASTER CYLINDER



**£100.** For a Leyland FG700. NOS. Plenty of pictures by E-Mail if reqd. Hampshire. 07971 530398 (SN)

### MINTEX MFR 396AF REAR ALFA ROMEO 33 1700IE

**£various.** 1700 4x4 1986on, 1800TD 1987on, sportwagon. 1986on £5, Belaco LS187 rear Austin Healey & MG Sprite & Midget 1963/1967, Belaco LS242 front Mini 850, 1000 etc 1965on Elf & Homet 1963/1969 £5, Ferado FSB268 rear Citroen ZX (BENDIX) 2/1994 on 1.4, 1.6, 1.8, & 1.9TD. Peugeot 306 1.8xt/1993, 405 all models. Supra steering rack boot kit MB20 Renault R4 1961on, R5 1972on, R6 1969on £5, Unipart. GHB 128/129 Austin A 35 & A40 Sprite 1959/1968 etc £5. all items plus p&p. JUNEMSPONG@aol.com (SN)

## PARTS FOR SALE MITSUBISHI L200 WHEELS AND TYRES



**2010, £150.** Four very good condition Bridgestone Dueller H/T 689 205/80R16 104S tyres with 7mm tread on balanced 16 inch steel six stud wheels with centre cap. Harford, Devon. 01395 488304 (SN)

### TYRES 4X4

**0 miles, £POA.** One LT 265/75R16 10mm tread. MXS Maxxis Bravo, £10. One L65/70R16 7mm tread. MXS BG Goodrich Altima t/a, £5. Oswestry. Shropshire. 01691 656031 (RB)

## WANTED

### ALL FORD RANGER TRUCKS



**Wanted.** Any year petrol or Diesel mot or not we collect good prices paid. (T). 07775 998628 (JW)

### ALL NISSAN CABSTAR TRUCKS



**Wanted.** Any year condition running or not top prices paid we collect all over UK. (T). 07775 998628 (JW)

### ALL TOYOTA HILUX TRUCKS



**Wanted.** Petrol or diesel two or four wheel drive clean or rusty top prices paid. (T). 07775 998628 (JW)

### ALL VAUXHALL BRAVA TRUCKS AND ISUZU TRUCKS



**Wanted.** Any year clean or rusty we are very good buyers. (T). 07775 998628 (JW)

## ISUZU AND BRAVA PICK UPS



**Wanted.** Diesel 2.5 or 2.8 or 3.1 top prices paid. Any condition, Email dbkiddle@hotmail.co.uk. 07775 998626

### LANDROVER

**Wanted.** Early 90 or 110 to use on farm. Hants. 01730 827444

### LANDROVER

**£500, Wanted.** Series 1, 2, 3 or Defenders. Any condition any area. Prompt payment and same day collection. Norfolk. 07775 203208 (SN)

### MAZDA VANS



**Wanted.** And Mazda trucks any condition petrol or diesel we buy. London. 07775 998626

### MITSUBISHI TRUCKS



**Wanted.** And vans any make year condition we collect same day. 07775 998628

### TOYOTA LAND CRUISERS



**Wanted.** And Colorado 4x4s we pay cash and come to your door. (T). London. 07775 998628

### TOYOTA VANS POWER



**Wanted.** Light ace, Hiace petrol or diesel we pay best. (T). London. 07775 998628

### WILLYS JEEP OR FRENCH COPY



**Wanted.** Any condition considered, reasonable price paid, cash on collection. Devon. 01548 521278 (SN)

## LITERATURE & INFORMATION

### LAND ROVER

**1957, £30.** Hard back edition. First overland by Tim Slessor, the companion book club price was 5'3. Suffolk. 01284 764286 (SN)

## MISCELLANEOUS

### 110CC QUAD BIKE

**£130.** Excellent runner, ignition switch replaced and 1 back wheel strengthened due to hairlining, minimal plastic damage (broken clips etc) new chain fitted not long ago, automatic transmission with reverse. Bedfordshire. 07950 346264 (SN)

### 14 FOOT LOW LOADING TRAILER

**£600.** Twin axle, 71in wide. Made by an engineer on 14in transit wheels and tyres. Complete with winch. Hydraulic brakes. Very well made. Suit moving tractor, car, etc. Norfolk. 07765 345613 (PB)

### 16FT CARAVAN

**£850 ono.** 4 berth, private end bedroom, double glazed, insulated, aluminium sheet construction, galvanised chassis, torsion bar suspension, lockable ball hitch, small shower, chemical toilet, ready to go. Made by Burstner Lux. Staffordshire. 01538 266215

### 2 WHEELED HAYWAIN/ MARKET CART



**£300 ono.** Complete with detachable sides, lades & windlasses. Barn stored requires sundry repairs but everything there, Ideal restoration project. S.devon. 01548 550689

### 3 TON TIPPER TRAILER



**£300.** Good tyres. Average condition. Warwickshire. 07913 678762 (PB)

### 3 TON TIPPING TRAILER



**£995.** Fully rebuilt with new steel and Keruing hardwood timber. Three stage ram with dowty coupling. Telford. 07891 492601 (SN)

### 3 TON TIPPING TRAILER

**£POA.** In good condition with a set of professionally made high sides fitted. Ideal for wood or Horse Manure. Can deliver at cost. richardscarborough9@hotmail.com (SN)



## 3.5TON TIPPING



**£995.** 07752 287109. Somerset (SN)

## 4 WHEEL TRAILER



**£700.** Approximately 2.5 ton carry, on Land Rover wheels, brand new winch never used, 4 spare tyres in good condition, new lights and brakes. Lincs. 07833 097188

## ABI CARAVAN 400/2

**2001, £2,700 ono.** Yorkshire Platinum, bone dry, service, bills for new parts, nothing needed, just pay and drive away. Derbyshire. 01332 733614 or 07542 505405

## ABI SUPREME

**1982, £POA.** 2 berth caravan, 11ft, porch, awning, ideal for rallies, gas appliances, good condition. Herts. 01763 208624 or 07866 074838

## ADVENTURE PICK-UP CAMPER



**1996, £600.** Will fit most 1 ton pick-ups. Demountable in under 20 mins. 4 berth, hob, fridge, toilet, mains socket. Slight water damage. Front of Luton body. Must sell, moving house. Northants. 01327 263251 (PB)

## ALUMINIUM TRUCK BODY



**£400.** All aluminium, drop side, tipping body came off Bedford TK 7.5T. Has cubic measure gauge inside. 07768 435024 (SN)

## ANTIQUE FUEL TANK



**£145 buyer collects.** Used behind road rollers. It's got oil box to store on iron wheel 3rd in good condition. Needs painting. 07833 097188 (SN)

## BESPOKE SHEPHERDS HUT



**£Offers.** Cedar exterior. Fully insulated. Electrical sockets and lights. Towable. Ply braced. Cladded interior. Plasticised tin roof. Hand made modern steps. Pneumatic tyres. All finished to high standard. Sensible offers please. Somerset. 07443 470079 (PB)

## BOX TRAILER



**£750 ono.** Alloy body box trailer, 10ft x 5ft with drop down ramp/door, has tilt bed and winch, 3 new tyres, used by me to carry small vintage car, excellent condition. North Yorks. 07968 401316

## BRIAN JAMES



**£1,650.** 14ft beavertail hydraulic tip recovery trailer. Galvanised. Good condition. Ready to use. Brakes reconditioned. With ramps. Norwich. 01603 881672 / 07765 345613 (PB)

## BRIDPORT TRAILER



**£250.** Engine trailer 5ft x 3ft x 27in deep, drop down ramp, full electrics, 3 good tyres, cover, a dream to tow. S. Glos. 0117 932 4866

## BRIMEC LOW LOADER



**£POA.** 40ft roll off body trailer, air brakes, 30ft bed, 8ft wide, small diesel engine for hydraulics, 3 spool hydraulic, two for body, one spare. West Yorkshire. 07985 055250 or 01132 853530

## BTC 4 IN LINE 33 FT SINGLE AXLE TRAILER



**£POA.** Needs refurbishment. Lancs. 01995 606521 (SN)

## BTC VINTAGE TRAILER



**£700.** Chassis in good condition for age complete with original vacuum brake equipment. Aberdeenshire. 07970 616412 (SN)

## BUCCANEER



**1980's, £3,250 ono.** 22ft very good bunks and blinds. Display cabinets cut glass mirrors, in good condition. Will part exchange for vehicle or caravan. Suffolk. 07799 223166 (JP)

## CAR TRAILER



**£1,400.** (Fountain 2008) Classic Mini size Twin Axle; Payload 1500 kilos fitted toolbox; splash guards; straps; Bulldog wheel clamp. Lincolnshire. 07941 686624 (SN)

## CAR TRAILER/TRANSPORTER

**£600.** Four Wheeler with twin Axle 14' Long made by an Engineer-Very Well Made On Transit Wheels and Tyres Just needs a coat of paint-Very Safe and Reliable. 07765 345613 (KP)

## CARAVAN



**£Sensible offers.** Unique design. Excellent condition. Pine interior. Fully insulated. Cedar exterior. Side awning. Front fold down veranda. Bunk beds and single bed. Toilet cubicle. Fitted kitchen, fridge, enamel sink and full size cooker. Cheshire. 01260 224685 (PB)

## CARAVAN



**1973, £8,000 ono.** Immaculate condition throughout. Cut glass mirrors crystal chandeliers coal fire etc. Kent. 07799 063102 (SN)

## CARLIGHT COMMANDER 18/4

**1991, £8,750.** One previous owner. Stored in garage from new. Immaculate condition. Northamptonshire. 01604 790399 or 07745 839979 (RB)

## CATERING UNIT



**£4,350.** 16ft x 7ft, multi purpose twin axle (Towability made), fridge/boiler/griddle, Treadex flooring. 07970 973131

## CLASSIC MINI TRANSPORTER



**2008, £1,400 ono.** Twin axle (1500 kg), minimal use, fully braked, fitted tool/storage box, front splashguards, wheel-clamp, spare wheel, fixing straps etc, all great condition. Lincolnshire. 07941 686624

## COACHMAN VIP



**£1,800.** Twin axle touring caravan. Spacious 4 berth interior. Fully equipped. Central heating. Gas, electric or battery fridge. Bathroom with shower. Shropshire. 01691 718375 (PB)

## CONTAINER 12



**£750.** Feet long can lock up in good condition. Notts. 07976 421725

## DODGE COMMERCIAL MOTORHOME



**1979, 71,000 miles, £1,850 ono.** Good home wanted for my 4 berth camper. Runs and drives OK. It just needs the right person to put back on the road. Some parts. Cumbria. 07932 106066 (PB)

## DOMESTIC OR SMALL HOLDERS TRAILER

**£125 ono.** Pre-war, restored, not too heavy, inside sizes are 76.5inch long 39inch wide 12inch deep, drop tail gate, two 17inch wheels, over run brakes, dry stored, many uses, would suit trailer enthusiast, a bargain. Kent. 01634 815736

## ECCLES SAPPHIRE (CARAVANS INTERNATIONAL)



**1971, £900.** 4 berth. Hob and oven. New fridge. Room and water heaters. Roof OK. Ceilings and walls need attention. Classic style. Two doors. Bay window. Without new appliances £500. Berks. 01628 661985 (PB)

## ECONOLINE

**£Offers.** Diesel motorhome. Owned 20+ years but unused last 9 years so needs work. Open to serious, fair offers as storage lost due to sale of farm. 07866 004385 / 01253 298785 (SN)

## ELDDIS WISP CD



**£2,500 ono.** Caravan 10ft, 2 berth. All mod cons with full size awning and all camping accessories. Damaged skylight vent. Ideal for touring. Essex. 01375 371737 (PB)

## ELDIS ELF

**£1,100.** 2 berth caravan. Very clean. 2 batteries. Digital TV aerial. 2 security devices. Awning used 3 times. Ill health sale. Dorset. 07999 593141 (RB)

## EXPERT HDI LWB



**2009, 15,233 miles, £22,000.** Camper van. Registered 23/10/09. MoT 3 months tax tracker. First class condition. Full service history. Ideal back up vehicle for shows. Staffs. 01902 850021 (SN)

## FARMER'S LIVESTOCK TRAILER

**1950, £650.** Restored to original condition. Dorset. 07999 593141 (RB)

## FERGUSON 3 TON TIPPING TRAILER



**£Offers over £875.** With extended slot in sides sound chassis and boarding for restoration. 01652 678417 (SN)

## FERGUSON 3 TON TRAILER



**£800 ono.** Complete with bale extension and ladders in good condition always keep in shed. 01446 772350 (SN)



## FLEETWOOD GARLAND 128/2



**1993, £500 ono.** Fully equipped, hot water system, shower, gas cylinders, stabiliser, new easy move motors fitted, water containers, fridge, oven, gas heater, loose equipment, microwave, twin hot plate, electric oven/grill. Surrey. 07757 786428

## FORD TRANSIT MOTOR HOME



**1996, £10,500.** (Herald) bluebird -poole, air ride, 2.5 cc - diesel 5 berth -cooker - toilet-shower-fridge=heating-awning- u lounge odd extras. long MoT very good condition throughout. 07870 682502

## FRISKY 4 BERTH CAMPERVAN

**1987, 38,872 miles, £1,100.** Used daily until Jan 2015, SORN since then. No MoT, some welding required to pass MoT (I was advised £300/400 approx). Engine overhauled and converted to unleaded petrol. CD/Radio, Electric hook up. Female owner. All original including fridge with freezer compartment, 2 ring gas hob with grill, sink, portaloo. Double bed sleeps two adults with two hammocks above. Side and rear door access. Spare gas bottle. Plenty of storage. Two tables with changeable positions. 07986 558450 (SN)

## GALVANISED TRAILER

**£875.** 8x4 twin axle with strong ladder rack. As new. Will carry 11/2 to 2 ton. Suffolk. 07907 291484 (PB)

## HAND CRAFTED SHEPHERDS HUT



**£9,000.** Has cedar exterior with a traditional tin roof. Fully insulated with electrical sockets and lights. Interior has cedar ceiling with oak flooring. North Yorkshire. 07793 388805 (SN)

## HAY TRAILER 14 X 7

**£600 ono.** With Hay Lades Back & Front. Low Trailer Ideal for a Small Holding. Devon. 07817 596118

## IFOR WILLIAM'S TRAILER



**£1,250.** Four wheel. Drop sides, four wheel braking. Good tyres and spare. V.G.C. Essex. 01206 323334 (SN)

## IFOR WILLIAMS



**£1,495.** All alloy twin axle 2.7 tonne. 8ft 3in x 5ft 3in trailer. Spring assisted loading ramp. Ball hitch, near new tyres, lights, brakes. All good. Great Yarmouth. 07788 561850 (PB)

## IFOR WILLIAMS CC.166.G



**2001, £1,675.** Tilt bed 16 foot trailer with sides. Twin axle fully galvanized. Shropshire. 07899 886884 (SN)

## IFOR WILLIAMS EUROLIGHT TRAILER MODEL



**£900.** ELO71-2512 carry 750kg 8ft 8in long 4ft 6in wide. Drop sides, front & rear, complete with spare wheel. Just over a year old, used twice. Cost £1,400 would sell for asking price. East Sussex. 01424 871003 / 07801 844175

## IFOR WILLIAMS LOGGING TRAILER



**£1,500.** Worcestershire. 07977 742014 (SN)

## IFOR WILLIAMS TRAILER

**£1,700 ono.** 16ft beavertail trailer with ramps. Good trailer. Norfolk. 01366 500803 / 07748 702609 (PB)

## IFOR WILLIAMS TRAILER

**£1,250.** 3.5 GVW, suit mini digger, will take a tractor, twin axles, drop down alloy ramps, 10ft deck, side rails, lights, good condition, tows well, reluctant sale. West Midlands. 07808 855076

## INDESPENSION TRAILER

**£1,600 ono.** 12 x 6ft 6in flatbed sides, ramps, prop stands, lights, brakes. All work good condition. Lancashire. 07968 862583 (RB)

## IVOR WILLIAMS



**2006, £POA.** 6ft x 4ft trailer. Solid glav body. New bottom. Very good condition. Very good tyres. Little used. Suffolk. 07884 250326 (PB)

## IVOR WILLIAMS TRAILER



**£1,050 ono.** Hampshire. 07860 542658 (SN)

## JUBILEE AMBASSADOR



**1991, £750 ono.** 4 Benth stored under cover. Not needed anymore. 07811 681316 (SN)

## LAND ROVER SERIES III

**1978, £1,500.** Clearing barn. Various Land Rover spares. Canopy, tub, diff etc. Complete Series III for restoration. Also early Honda Shuttle spares, recon engine £300. Also Saab early V4 engine, unknown £100. East Sussex. 01435 864776 (PB)

## LIVING VAN

**£8,000.** 10ft x 6ft Living van built in 2009 on a 4 wheel turntable chassis to a very high standard complete with fibreglass roof. Northwich. 07597 037209 (SN)

## LT35 MOTOR CARAVAN



**1994, 128,000 miles, £5,500.** Hob grill and oven, coolbox, chemical toilet, diesel heater, solar charger, 2 x 100 amp batteries, 240v hook-up, 2 skylights, insulated single/double bed, 4 good tyres and 2 new spares. 11 months MoT. 2.4 diesel. FSH. Hampshire. 07582 443836 (RB)

## MASSEY FERGUSON 3 TON TRAILER

**£1,100 ono.** Wooden sides, excellent condition for age. Hants. 07879 478175

## MERRYILLER TRUCK



**£350.** Complete and in working order with range of tools for the Rotavator. Sussex. 01323 442842

## MORRIS J2 PARALANIAN



**1963, 46,535 miles, £20,000.** Fully restored and in excellent condition. MoT until July 2016. Featured in this magazine December 2002 p22-23. Derbyshire. 0115 973 4024 (SN)

## NEW FLEMING TIPPING TRAILERS



**£POA.** 1.5t to 8 ton. Low cost delivery all UK, France & Ireland. View our website <http://www.jjcfm.co.uk/>. 07890 286908 (BM)

## PRIVATE NUMBER PLATE

**£1,500.** V V G 12. 07407 613987 (SN)

## PRIVATE NUMBER PLATE

**£POA.** XJ1 2 XXX. On retention, transfer fee paid. Offers invited. 01603 261111 (SN)

## RENAULT T800 MOTOR CARAVAN 2 BERTH



**1987, £1,300.** A 2 berth motor caravan fully equipped and ready for camping. Smooth-running 1397cc petrol engine. Economical and in low road tax bracket. Uses unleaded petrol. Can be insured on a classic insurance policy. (e.g. Towergate Insurance) MoT to June 2016. Not taxed O SORN. Recent new starter. Electric petrol pump fitted. Tyre pressure 45psi. Norfolk. 01328 598080 (SN)

## RULLY MADE IN MALTON



**1943, £Around £750.** In good condition, rare trailer and needs only minimal work, repaint etc, reasonable offer. North Yorks. 07968 401316

## SALOP FOUR WHEEL TRAILER

**£1,200.** 13ft x 6ft 6ins. Dry sbred, good condition. Staffordshire. 07952 194155 (SN)

## SANKEY 1 TON ARMY TRAILER



**£150.** With 8 stud wheels in solid condition but needs cleaning and paint, lights and brakes need sorting. Yorkshire. 07789 322084

## SAXON GARDEN TRAILER

**£200.** Saxon drop side manual tipper trailer approx 3ft 3 inches by 6ft 7 inches. Suitable for garden tractors or quads. Good condition. Phone after 6 please. Wiltshire. 07751 817429 (SN)

## SHEPHERD'S HUT



**£9,000 ono.** Towable by car. Unique - No other like it. Fully insulated, sleeps 4, woodburner, electric hook-up. <http://capeliagosawmill.weebly.com/the-shepherds-hut.html>. Sawmills. 07583 723677

## SHEPHERDS HUT



**£2,900.** 12ft x 7ft, iron wheels, new wood and tinwork, very strong, can arrange delivery with Land Rover and trailer to site. Dorset. 07813 864844

## SIPSON 30FT LIVING VAN



**£3,000 ono.** Still weather tight but needs some work. Berkshire. 0118 934 2670 (SN)

## SPLITSREEN CAMPER VAN

**1965, 87,000 miles, £6,800.** Taken back to bare metal and fully restored to the highest standards. Not an exhaustive list but the key work completed as follows. Finished two weeks ago so in pristine condition. more info contact me. 0117 318 0783 (SN)

## SPRITE 14



**£450 ono.** Well looked after, one lady owner last 12 years, no pets, ideal for rallies, light to tow. Cheshire. 07801 442626

## STEAM ENGINE ROAD ROLLER

**£POA.** Roadmans van with two belly boxes. Offers when seen. Dumfries And Galloway. 01644 440279 (RB)

## STOCK TRAILER



**£950.** Aluminium sides and floor. 10ft x 6ft, 6ft high. Goodyear tyres. VGC. Yorkshire. 07815



## NEXT MONTH

What's coming in 4x4 Magazine

# THE DRIVING ISSUE



**WE TAKE A LOOK AT WHAT'S AVAILABLE  
TO LEARN TO DRIVE (BETTER) OFF-ROAD**

## HIGH SECURITY

Specialist vehicle production

## PYRENEES PREPARATION

Getting ready for the mountains

## PICK UP A PICK-UP

Reviewing the commercials

## A JIMNY WHAT?

Amazing small off-roader

## NEXT YEAR'S SURPRISES

Exciting new models revealed

Plus we have the latest from Project Pick-up, report from the 24 Hours Off-road race, the latest from the Auctions, Club News and much more

Contents subject to alteration



**All this in the December issue of 4x4 Magazine  
On sale Friday 16th October**

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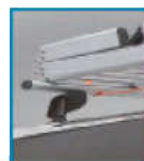


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# All fours

Modified Jeeps aren't exactly rare - unless they happen to be a mysterious blend of military and agricultural with four-wheel steer as well as four-wheel drive

**T**he Jeep was supposed to be a universal working vehicle, but I can't help thinking that this bewildering modification on a Willys MB is taking the concept a little too far. When we first saw it, from a distance, it seemed to have been involved in some sort of accident, judging by the wacky angle of the rear wheels - until, on closer inspection, it turned out to have four-wheel steering. I assumed it was a one-off modification, but a check on historic Jeep production figures revealed that as many as 200 were made with four-wheel steering as part of the US Army's requirement. What is interesting, though, is that the oddball heavily-modified Jeep we found sitting in the middle of a grassy field in the Ardeche region of southern France had a maker's plate identifying it as a Willys MB with the serial number 258014, suggesting that it was one of the 93,000 built during 1943. So what's interesting about that, you may ask? Of the original 2600 Bantams supplied by the Bantam Car Company, 50 could have been made with four-wheel steer; subsequently Willys were asked to produce 50 of their earlier MA model with four-wheel steer, and Ford were twice asked to make 50 of their GPW with four-wheel steer. Nowhere, however, is there any suggestion that any MBs were made with four-wheel steer.

With any old Jeep, particularly one this heavily modified, it's quite likely that damaged panels and missing components could have been replaced by parts from other cars, so the steering mechanism may well have been transferred from one of the 4WS MAs or GPWs as part of a post-war agricultural modification, as also suggested by the word 'TRACTEUR' stamped in red over the identity plate. It's also not unknown for identity plates to be replaced, possibly with fraudulent intent, though that's usually to disguise a Hotchkiss



or a careful rebuild using spare parts and a Philippines-made bodyshell as a valuable wartime original, but in this case there's no reason to doubt that it's an early original Jeep.

After the Second World War many Jeeps were converted for use as farm tractors, but with its screen-mounted rifle carrier and side-mounted axe and shovel this vehicle does look as if it could have had a military role - although these, too, could have been added in an effort to enhance its value by reinventing its wartime purpose. For instance, the bonnet has a military registration number - 20349705 - which would seem to date it from 1941, which doesn't match the identity plate so the bonnet and other military bits could have been recovered from an older MB. The replacement trayback rear body section seems to be original enough, it appears to have been crafted from the same material used for the original body, and has been very neatly grafted on - note how the side carrying handle spans the join, the rear section

includes the holders for the roof poles, also the tail lamps and trailer sockets have an authentic look to them.

There is one further possible clue to the car's origins, in the form of the letters PJ stamped, again in red, after the WILLYS on the ID plate. An internet search for 'Willys PJ' returned a result, but not the one I expected. A good one, nevertheless - Texan P.J. Hale's 1948 Willys, with some big modifications of its own - such as a 302 cu in Ford V8 engine, massive suspension lift, 20-inch wheels on Rockwell axles and 54-inch Mickey Thompson Baja Claw tyres, enough to win it the Top Truck Challenge in 2010. That doesn't help me identify the oddball Willys, though. The fact that it has four-wheel steer and an earth-moving bucket is only one of the interesting features - it also has a mid-mounted capstan winch, a separate PTO takeoff at the rear and a hydraulic control to work the muck-spreader bucket. Clarification from an expert would be welcomed. **Bob**





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